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ORIGINAL ARTICLES.

REPORT ON EXAMINATIONS OF THE EYES OF 1,900 SCHOOL CHILDREN OF THE PUBLIC SCHOOLS OF SAN FRANCISCO.

Read in the Section on Ophthalmology, at the Forty-fifth Annual Meeting of the American Medical Association, held in San Francisco, June 5-8, 1894.

BY KASPAR PISCHL, M.D.

SAN FRANCISCO.

Since Professor Jaeger, of Vienna, in 1861 had begun the first scientific examination of the eyes of school children, over 200,000 pupils in all parts of the civilized world have been examined. All those investigations have proven that myopia stands in direct proportion to the education of the people. If I venture to ask your attention for a few minutes only to hear the report of the examinations made in the schools of San Francisco I do not pretend to show you anything new, but I hope it will be interesting enough to compare the conditions of the eyes of the children in this new country with those of other countries.

To enable you to judge about the value of the data of my examination, I will explain in a few words the method I employed. I examined the sight of every child, each eye separately, with Snellen's letters. When I found normal sight not impaired by putting before the eyes + 1° I marked hypermetropia. If + 1° blurred the sight, emetropia. This last column is not reliable. I am sure that many hypermetropic and astigmatic eyes were classed among emetropia. Those who with one or both eyes did not show normal sight were examined with the ophthalmoscope. Every pupil was examined regarding the conjunctiva and lids. A glance at Table 1 shows us at once an increase of myopia with the grade of the class; from 3.98 per cent. in the grammar school to 11.59 per cent. in the normal school. At the same time, the number of pupils with normal sight decreases from 90.20 to 75.71 per cent. This deficiency of sight and increase of myopia is most prominent among the girls of the high and normal schools.

SAN FRANCISCO SCHOOLS, 1891-92. PERCENTAGE OF.

Table 1.

Schools.	No. of Scholars.	E.	An.	H.	M.	Conj.	6/6 B.E.	6/6 One E.	6/6 Both E.
Grammar	1,200	68.60	6.32	20.9	3.98	26.25	90.20	7.03	2.77
Boys' High	305	76.06	13.12	4.56	6.23	31.11	85.91	7.86	6.23
Girls' High	299	69.68	9.28	14.02	7.02	41.00	80.66	5.00	14.34
Normal Class	69	63.76	18.86	5.79	11.59	41.42	75.71	1.00	23.29
Total	1,953	69.52	11.89	11.12	7.20	34.94	83.7	5.22	11.65

This fact is quite in accordance with the observations of Dr. Gould and Dr. Southard, our esteemed colleague present, who in his examinations of the eyes of the students of the University as well as his analysis of 1,300 cases of refraction found myopia or refraction errors in general more frequent in the female sex than in the male. He gives a clear explanation for it: They use their eyes more. In Europe we find the contrary to be the case. There the boy gets a much better education, boys only are admitted to the gymnasium and then to the university, and among those students we find over 50 per cent. myopia.

Table 2.

1890	24 German	Gymnasium			9,344	22-58	Myopia.
1891	Gelphe	Karlsruhe	Erneiterte Elementar Schule		2,406	8.9%	"
1885	Axel Key	Stockholm	7 Class School		11,210	15%	"
1879	Nicati	Marseilles	Lyceum		About	30%	"
1881	Risley	Philadelphia	Gramm'r School 14 years.		430	11%	"
"	"	"	Normal School		553	19%	"
1882	Dr. Derby Mittendorf	New York	Gramm'r School		1,394	10.5%	"
1892	Southard, San Francisco	University of California	311 Students	E. 34.35%	H. 35.63%	M. 6.9%	

Of all the myopic pupils, 25.25 per cent. are of American parentage, 25.25 per cent. of mixed American and European parentage, and 49.50 per cent. are of European parentage.

With conjunctivitis I marked irritation, simple and follicular conjunctivitis. This affection increases in number with the classes.

The fact that myopia is much less prevalent here among children than in Europe or even in the East, may be explained by their better physical development, caused by abundance of good food, due to our fertile soil, and the almost constant outdoor life permitted by our wonderful climate.

In conclusion, I have remarked that these school examinations do not pretend to be of the exactness of the office examinations, but I consider them exact enough for statistical purposes. The column for myopia I believe to be reliable, the column for hypermetropia probably shows too small a percentage as some hypermetropic and astigmatic eyes are classed among emetropia having normal sight. An exact examination of refraction with mydriatic was impossible, as it would not have been permitted by the school authorities.

The great increase of the conjunctival affection with the grade of the classes points to the existence of eye strain which in a great many cases may be caused by hypermetropic astigmatism, therefore an exact examination of every pupil would be desirable.

DISCUSSION.

DR. S. B. DAVIS—In the Young Ladies' High School, I found many cases where astigmatism was reducing the vision to twenty-two-hundredths. In some cases, their vision was practically good and a slight correction made wonderful results. The difficulty was chiefly with those whose studies were pressing them, and we came to the conclusion before we examined 500 students in that way that they were getting their education at the expense of their sight.

DR. H. H. WEER—It strikes me that physicians assume too much in regard to the eye. If there is anything that makes an eye man tired, it is to see some one attempt to do some-

thing according to some hypothetic theory and make a dismal failure of it. I can not understand how the use of test cards is any test for hypermetropia or myopia. It strikes me that a person having astigmatism of very low degree and in ill health, would have disturbance of vision. I have been acquainted with one of the assistants of the Manhattan Eye and Ear Hospital in New York City who had 12 D. astigmatism and never wore a glass.

I would like to ask how in determining the hypermetropia and myopia, do you dispose of the accommodation? If I remember correctly, there is a vasomotor nervous system, and I have had pupils stand up in front of me whose vasomotor and spinal nervous system were so thrilled that they had lost entire control over every sphincter muscle in the body.

Now, you will all agree that one of our great troubles is our accommodation. This seems to me to be a point that should be taken into consideration in determining the hypermetropia of school children. In the dark room of the Manhattan Eye and Ear Hospital, we were requested to examine a very marked case of myopia. I examined the case with my ophthalmoscope, and I pride myself on the use of it. If I see the blood vessels and the velvety appearance I turn the glass, and if the velvety appearance comes out stronger than the white lines, then I say I have not here a case of myopia. I ran up to 8 D. and got a clear perfect vision of the disc, and the velvety condition of the retina. I remarked that it was a case of high degree of hypermetropia, and it was decided by the great Dr. Morrison that it was hypermetropia. There we had a patient who had been diagnosed by several physicians as myopia. That is merely a mistake. It illustrates the fact that if you rely on the test card to decide what the error is, and pronounce that child myoptic and attempt to give it correction with the minus glass it would be entirely an error. There is another interrogation I would like to make for my own information. I notice, according to the chart, that as the school life advances, the conjunctivitis advances. Might not that be from eye-strain? Another thing—I have been so unfortunate as to just conclude fitting patients, when they took a spell of sickness. Upon recovery I found that my glass was entirely useless. This brings up another matter I wish to advance: Is not the hypertropic eye the normal eye? Is not the metropic eye, the uncommon eye, called the normal eye?

DR. H. B. YOUNG—I look upon all these statistics with regard to school children with a little allowance. If we could be sure that those marked for myopia were myopia—but with the methods hitherto employed, I think there is room for doubt about it. There is but one way I can imagine, without an enormous amount of work that we can get at it with anything like accuracy, and that is that we must make ourselves expert skiascopists. I should not be in dependence myself upon the lenses for half the cases. I believe when we get statistics by this method of examination, we will get something very much more reliable.

DR. W. F. SOUTHARD—The fact about statistics is this, that we have had gathered up by a very large number of gentlemen in the last twenty years an enormous amount of statistical matter, which has proved that there is a vast percentage of errors from refraction existing among school children, covering the ages between 5 and 25, besides others that have been carried on in the higher schools to which I referred this morning. The point that has been established is that nearly every child of 5 years of age is hypertropic. The second point that has been established is that myopia is but rarely seen in childhood. It has also been very accurately determined that myopia is a condition which does advance step by step in school life, as we go from grade to grade.

Now, throwing aside all the statistics relating to hypermetropia and astigmatism, one phase of myopia is not so difficult to arrive at. Myopia is very much more easily determined. In fact, it is found that using the same methods which do not show myopia at 5 years of age, it does show a percentage of myopia increasing with each grade of school life as we ascend from the primary schools into the grammar schools. If we take the European statistics, especially on myopia, because in Europe this examination has been more especially applied to myopia than to anything else—the most exhaustive paper written in the past ten years has been written and re-published in this country, and it covers the error of myopia more especially. I wish to call attention to the test which shows that more myopia exists in the peasant schools, and shows it to increase from grade to grade in rapid ratio in Germany. That is an important factor, whatever the methods established may have been. If we analyze the greater portion of these statistics that have been made, it is very curious that they have not given their methods of procedure more accurately, so that we could know what their methods were. I should say the work had been by the use of a test card and probably glasses. We have found by a less number of examinations, covering over a considerable portion of our own country, that we do have in America a vastly less percentage of myopia for the same grades as they have abroad. Dr. Shrady, of New York, in reviewing some statistics I have made, said he believed that was the result of older civilizations—that there would be found in them a much greater percentage than in the newer countries. We have a much larger per cent. in New York and Boston than here on the Pacific coast.

Now, it being certain that myopia is the accompaniment of civilization, we as oculists should advocate laws compelling the examination of school children. I have not much faith in examinations that are not made by ophthalmoscopic examination in the dark room. I have not examined a single patient without the use of the ophthalmoscope. I do not rely upon a test card. I think that in the entire series of examinations the test has but one value, which was to determine the equivalents. That does not determine the ametropia at all. Out of a large number of students the equivalents run to 60 and 70 per cent. and 20-20. I agree with the writer who states that ametropia is simply a stage in the progress towards myopia. I want to say that I am not particular about the statistics. I think the statistical matter has been carried to the extent that we now know we have this enormous percentage of errors. The question is to know how to prevent it. I have about seven or eight hundred papers of figures in my desk that have not been tabulated, because I concluded that there is enough of that work done to show the facts, and I want to bring before the teachers and others, methods by which the troubles can be prevented in an expeditious manner. I do not think that there is any need of our having any more than a very small percentage of error, if we do examine under the proper tests. It is proven that we have an enormous percentage of children in the primary and grammar schools who are suffering from hypermetropia uncorrected. My position in regard to children's eyes is that if we are to bring about any change in those who are older, we must begin with the school children. If we can have an examination made of the eyes of the school children, it is of just as much value as is the physical examination made in larger schools for the determining of their body power to study, as far as the functions go. Upon that point I have dwelt for some years and feel it is important for us as oculists to attempt to sustain any effort to secure legislation that will obtain compulsory examination of children at school.

H. L. BURRELL—Mr. Chairman, I believe that statistics of

myopia in children are absolutely unreliable, unless a course of mydriatics is given.

A MEMBER—Mr. Chairman, we did not say in our reports myopia, hypermetropia, or astigmatism. Our reports simply say "errors of vision brought out by the tests." My reports read "such a per cent., as nine, seven, six, five or one-tenth" as the case might be.

DR. PISCHL—Mr. Chairman, I started the examination in order to compare especially the myopia which I might find here with the schools in Europe. I knew from the beginning, and I said this in my paper, that in the schools I could not possibly find out exactly the hypermetropia or the astigmatism. That can only be done in the office. It can not be done in the school room, and would not have been permitted. It would have kept the child away from the school rooms and would have been impossible. Many of my scholars were hypermetropic or astigmatic as I said in the paper. As to those which were not, that could not be decided. But I think that the numbers for myopia are reliable. I do not think it is necessary to apply the ophthalmoscope for the myopia. The trouble in the conjunctiva, or the irritation, increased with the glasses to 41 per cent., showing clearly or at least hinting that there is eye-strain in many cases, and giving us the hint that not such a great portion have normal sight. They have errors which could only be corrected in the office.

SUB-CONJUNCTIVAL INJECTIONS IN THE TREATMENT OF EYE DISEASES.

Read before the Section on Ophthalmology, at the Forty-fifth Annual Meeting of the American Medical Association, held at San Francisco, June 5-8, 1894.

BY WM. ELLERY BRIGGS, M.D.

SACRAMENTO, CAL.

Subconjunctival Injections in Ocular Therapeutics.—During the past four years Drs. Darier and Abadie, two very progressive Paris oculists, have been extensively using subconjunctival injections of mercuric chlorid solution in the treatment of many eye diseases. As I watched their work in their large clinic, during the experimental stage of the method I saw it tried in many diseases in which there was obviously little or no hope of benefit to be derived from any treatment. But from my observations I became convinced that good results were obtained in a certain class of cases. Since that time I have treated quite a number of cases by the method and have been led to the conclusion that many of them had done better than they would under the other treatments alone.

Most of the cases under my care have been of septic or syphilitic origin, so other treatments had been used in conjunction with the subconjunctival injections.

I deem it an injustice to a private patient to neglect the use of a remedy which is known to be beneficial in order to try some uncertain treatment. It is the class of cases to which this treatment is applicable that require prompt and efficient care. It is impossible to determine with any degree of certainty the amount of influence the injections may exert on the course of a disease process. We can arrive at our conclusions only in a general way by comparing the progress of a number of cases treated by usual methods with others similarly treated with the injections added. My conclusions may not be shared by many, but I believe that this method of treatment is a real advance and will establish a permanent place in ocular therapeutics. In Germany as well as in France a number of prominent oculists have reported very favorable results from the method, but I have been surprised that so little attention has been paid to it in this country.

Previous to the adoption of subconjunctival injections Drs. Abadie and Darier had injected sublimate solutions directly into the vitreous. They claimed that this rather bold procedure had yielded good results but it was abandoned for subconjunctival injections as being less dangerous.

Dr. Darier injects two to five drops of a 1 to 1000 sublimate solution beneath the conjunctiva and not nearer than seven millimeters to the corneal border. If the injection is made too near the cornea the pain is likely to be severe. Care should be taken not to puncture a conjunctival vessel or unpleasant ecchymosis will follow. In case this does unavoidably occur it will soon disappear under applications of hot water. The conjunctiva should be thoroughly anesthetized by cocain previous to treatment. It is hardly necessary to mention that the solutions and instruments used should be perfectly sterilized.

In my practice I have generally employed three to five drops of a 1 to 2000 bichlorid solution. The frequency of the injections should be regulated by the urgency of the case and the severity of the reaction. In a few cases they can be made daily for a few times but in most cases not oftener than two or three times a week. Immediately after the injection a little bleb appears at the point the fluid enters. Frequently sharp pains are experienced for a couple of hours after the injections. This can be mostly relieved by cocain drops and hot or cold water. The position of the injection should vary to prevent excessive irritation—a point covered by one of the lids is most favorable.

Local treatment has been made in different parts of the body by injections in the location of the disease process with more or less success for a long time. We owe our knowledge of the method of action of subconjunctival injections to the experiments of Phlüger and some others. These experiments have demonstrated that after subconjunctival injections of bichlorid solution the salt is found in the cornea, aqueous humor, suprachoroidal space, vitreous humor, and the superficial layers of the lens. The mercuric chlorid reaches the tissues of the eye before being taken up by the general circulation. We can thus readily understand how diseases of septic or syphilitic origin are promptly benefited. These are the cases which experience shows are most improved by this method of treatment.

In years past patients suffering from local inflammations of septic origin were given mercury internally to counteract the septic process. I have no doubt that by administering bichlorid solution subconjunctivally in septic ocular disease the same end can be attained with greater certainty and rapidity than by means of general medication. In nearly all cases the subconjunctival injections should be supplemented by other treatment appropriate to the case. The constitutional treatment is of the utmost importance in most affections of the uveal tract. The injections are frequently of the greatest benefit on account of the promptness by which the mercury can be made to reach the disease process. But the constitutional treatment is of quite as much importance in order to eradicate the constitutional disease upon which the local affection depends.

In treating septic conditions of the eye, either after operation or from injury, other treatment such as cauterization of an infected wound, paracentesis of the cornea and washing out the anterior chamber, antiseptic dressings, etc., should be combined with subconjunctival injections.

The cases in which I have found the method of treatment to do the most good are syphilitic diseases of the choroid and septic ulcers of the cornea. It seems usually to exert a salutary influence on most syphilitic processes of the uveal tract except in the acute stage of iritis. In some subacute and late stages of acute iritis I have had prompt improvement from the administration. It often seems to help in a marked manner cases of choroiditis of rheumatic origin, and in recent vitreous opacities from syphilitic retinitis good results may be expected.

When there is great danger of infection after operation Dr. Darier recommends injections previous to the operation as a prophylactic against sepsis. Such cases are those in which we are obliged to operate when disease of the lachrymal apparatus or conjunctiva exists. In septic infection after cataract extraction Dr. Darier has found the injections to act well.

Dr. Darier has laid down this rule, that in case improvement is not manifest by the tenth injection that we need not expect good from the method. This conforms to my experience as we generally get perceptible improvement in from four to ten injections.

Case 1.—R. H. S., age 28. He had suffered for three weeks from iritis of the left eye due to syphilis. Posterior synechia were so firm that a 2 per cent. solution of atropin had little effect on the pupil in twenty-four hours. The pain and inflammation being of a moderate degree subconjunctival sublimate injections of 1 to 2000 were made daily for three days when the adhesions were mostly broken up. The injections were kept up every other day for ten days longer. Mercurial inunctions were also administered. The iris was entirely freed from the lens and vision was nearly normal at the end of two weeks' treatment.

Case 2.—Mrs. L., age 48. Had been suffering with rhinitis and vitreous opacities for three weeks. Vision reduced to 1-8. Patient was placed on mercurial inunctions and subconjunctival injections were made every other day for five treatments, then twice a week for two weeks more. Vision was then two-thirds normal and retinal exudate had nearly disappeared.

Case 3.—E. N. W., age 32, single, contracted syphilis seven years previously. He had been treated constantly for two years and believed himself "cured." For ten days previous to consulting me he had noticed dimness of vision which increased rapidly. Extensive choroiditis disseminata was found. Vision in right eye 1-8, in left 1-6. Patient was given mercurial inunctions daily and subconjunctival injections every other day for two weeks; at that time vision was found to have improved in right eye to 1-2 and in left to 2-3. The choroidal inflammation had greatly improved.

Case 4.—D., age 42. Physician. Had never had syphilis. Patient had noticed his vision getting blurred for a couple of weeks. When examined inflamed patches of choroid were seen in both eyes. Patient was given pretty large doses of iodid of potash and subconjunctival injections. The injections were made twice a week for a few injections and every week or two weeks for six weeks from the beginning of treatment. The vision was then found to be perfect in both eyes. The choroidal patches of inflammation had almost entirely faded.

Case 5.—G. B., age 55. Patient denied ever having had syphilis. He had noticed increasing dimness of vision for past three weeks. Extensive disseminate choroiditis was found in both eyes. Vision was equal to counting fingers at fifteen feet. Patient had been treated with blisters to temples and some eye drops. He was put on mercury and iodid of potash and subconjunctival injections in each eye every other day for five injections when vision was found to be two-thirds normal.

Case 6.—M. C. R., age 35. Patient had the right eye injured by a piece of rock in a mine. A small wound was made just below the center of the cornea but as little irritation or pain resulted from the wound the patient continued to work for two days when he consulted me. The conjunctiva was found quite swollen and red with a free muco-purulent secretion. The corneal wound was about three millimeters long and ulcerating. The anterior chamber was half full of pus. The eye was intensely painful. Cocain solution was applied and four drops of 1 to 2000 bichlorid solution was injected. Iodoform was dusted into eye and dressed with antiseptic dressing. The next morning the eye was markedly improved. The same treatment was continued for three days when the hypopion had entirely disappeared and the eye was nearly well.

DISCUSSION.

THE CHAIRMAN—The method has not commended itself very strongly to my judgment and I have been slow about adopting it, but have noted this one interesting fact that it seemed very promptly to relieve pain especially in cases of keratitis, where pain has been very severe. I think that has been noted by every observer. It is a striking fact and one that seems rather anomalous that such effect should be produced without any apparent effect on the course of the disease.

DR. PISCHL—I wish to say that I tried it only in one case but the patient was so frightened by the swelling that I did not venture to continue it, and I am afraid that many patients will revolt against the injection.

DR. BRIGGS—Mr. Chairman, I have nothing particular to add. I am sorry that there is no more discussion on the subject. I think if Dr. Pischl tried it in cases of keratitis or some such trouble, he will continue to use it. My experience has been in certain cases quite favorable, and I am thoroughly convinced in my own mind that it acted very beneficially in quite a number of cases. A number that I have tried it in found no benefit, but I have not found the severe reaction that Dr. Pischl mentioned, and I have no patients who revolted or objected seriously to the treatment.

OPTICO-CILIARY NEUROTOMY, WITH EXHIBITION OF SCISSORS.

Read in the Section on Ophthalmology, at the Forty-fifth Annual Meeting of the American Medical Association held at San Francisco, June 3-8, 1894.

BY WM. ELLERY BRIGGS, M.D.

SACRAMENTO, CAL.

I wish to present for the consideration of this Society a modification of my ablation scissors: Scissors for performing optico-ciliary neurotomy. The original instrument was described in the *Archives of Ophthalmology*, Vol. xvi, No. 1. It consisted of two curved scissors placed parallel so as to enable one to cut a section of the optic and ciliary nerves without cutting any of the ocular muscles. The modifications consist in the addition of a pair of claws between the two scissors to insure the removal of the cut section of the nerves.

Any one who has to perform the operation of removing a section of the nerves by first dividing the internal rectus and then uniting the muscle with sutures, as is done by some operators, has found it quite a formidable operation if it has to be done without the aid of trained assistants. These operators, I think, will find these scissors of great convenience. In a few cases where I have been able to trace the condition of the patient for a few years I have found no return of pain in the eye, and as far as I could tell, the result has been as permanent and satisfactory as it could have been had the much more formidable operation of cutting the internal rectus been performed.

I believe the operation of optico-ciliary neurotomy deserves more attention than it receives from the profession. It should be done in many poor people who are unable to purchase artificial eyes, in preference to enucleation. A deformed eye if free from pain and danger of producing sympathetic ophthalmia is greatly preferable to an empty socket. In very young children it should usually be selected in preference to enucleation. It should be performed also in a very large class of cases which would require enucleation on account of pain or danger of sympathetic ophthalmia and in which the diseased eye looks better than an artificial eye can, or when the patient will not submit to an enucleation. In case of ocular tumors, enucleation is the only operation to be considered.

PURULENT OPHTHALMIA AND ITS TREATMENT.

Read in the Section on Ophthalmology, at the Forty-fifth Annual Meeting of the American Medical Association, held at San Francisco, June 5-8, 1894.

BY X. C. SCOTT, M.D.
CLEVELAND, OHIO.

In speaking of purulent ophthalmology I embrace under the one name all forms of this disease as described in most text-books, under the name of purulent ophthalmia, gonorrheal ophthalmia and ophthalmia neonatorum. It has always been a mystery to me why authors persist in making this unnecessary division, unless it is to mystify the general practitioner or increase the number of pages in their books. It seems much more simple to designate all three forms of this disease under simply purulent ophthalmia or conjunctivitis blennorrhea, for the parts involved are the conjunctiva and subconjunctiva, with a serous effusion into their tissues and also into the stroma of the lids. The only difference that can be found is the presence of the gonococcus of Neisser in cases of gonorrhea, but these gonococci are not always present, and even their presence I am unwilling to admit renders the disease more dangerous if properly treated. Every one agrees that purulent conjunctivitis in any form is one of the most serious and dangerous diseases of the eye. I shared this opinion in common with others until within a few years, when I adopted a plan of treatment which has robbed this disease of all its terrors, whether it occurs in infancy, childhood or adult life, provided the cornea has not become dangerously complicated.

These cases have been cured within a week or ten days in every instance, instead of running, as the books say, a course of four or five weeks in the most favorable cases. It is not necessary for me to describe the ordinary course of a case of purulent ophthalmia, as you are all conversant with it. You well know the great source of danger is the corneal complications which may arise from the swollen chemotic condition of the conjunctiva, cutting off the blood supply for its necessary nutrition; 2, the swollen hot lids and the cornea being continually bathed with pus causes a continual fomentation of the corneal tissue, and thus favors ulceration and destruction of this membrane; 3, the corrosive effects of the pus itself.

The great question that concerns us is how can we overcome or prevent these three important, dangerous and injurious factors which have caused such terrible havoc with so many eyes of mankind? By what treatment, or what is the best treatment, to cause these cases to run a short course and with a favorable ending without injury to the cornea?

You can not open any text-book but that you will find advocated, that in the formative stage of this disease, the conjunctival sac should be frequently cleansed of pus, at the same time using some imaginary antiseptic, but that it is extremely dangerous to apply any astringent remedies; that cold applications should be made continually to the lids until the conjunctival membrane becomes soft and succulent. This cleanliness and these cold applications are proper and certainly indicated, but in many cases if you wait until the conjunctiva becomes soft and succulent before making any applications to the surface of this membrane, changes will have taken place in the corneal tissue which can not be controlled and may finally end in the destruction of the eye affected.

Instead of a do-nothing and an expectant plan, in addition to trying to have perfect cleanliness and cold applications made continuously, I commence the use of the following prescription from the very beginning:

℞ Hydrastia sulphatis	grains 5	30
Acidi boraci	grains 5	30
Sodae biboratis	grains 5	30
Tinct. opii, deodorate	drachm ½	2
Aquae distillata	ounce 1	32

Mix and filter.

The attendant or nurse is instructed to cleanse the eyes every fifteen or twenty minutes day and night, by opening the lids and wiping away all the secretions possible; to make cold applications to lids by means of compresses which have laid on ice, and from four to six times a day with a long nozzled dropper and hot water to wash out all the pus held in the conjunctival sac under the lids, and afterwards to inject up and into the conjunctival sac of both the upper and lower lids an ordinary medicine dropper full of the above prescription. The nozzle of the dropper should be long and smooth and of sufficient length that it may be easily introduced without breaking under the upper lid.

The above mentioned solution seems to have a most beneficial influence on all acutely inflamed mucous membranes where there is a secretion of pus. I have used it in cases of other acutely inflamed mucous membranes with the same benign results and effects that have been experienced in the mucous membrane of the eye. When this solution is properly used in cases of purulent ophthalmia, there will be a marked improvement in the case within twenty-four hours, and within forty-eight hours there will be a remarkable diminution of the secretion of the pus, chemosis of the conjunctiva and swelling of the lids.

Once a day I turn the lids, and having cleansed away the pus apply a 1 per cent. solution of nitrate of silver to the palpebral conjunctiva by means of a large camel's-hair brush. Now you may say that this is falling back on the old treatment and that all the good comes from the employment of the silver salt. If this is true why did or do we not have the same benign results in the treatment of this disease from nitrate of silver, as it is the treatment recommended by all authorities as soon as the conjunctiva becomes succulent? I do not believe that the nitrate of silver has anything, to any great extent, to do with the aborting of the disease and the rapid

diminution of the secretion of pus, but I use it for two reasons: 1, it is recommended by every author writing on this subject as the sovereign remedy to be relied on in the treatment of this disease and if perchance, by any mishap, an eye should be lost and a case of malpractice should result the first question to be asked would be: "How did you treat this eye?" and when it was discovered that no nitrate of silver had been used as recommended by all authorities, the hue and cry would be raised that gross malpractice had been done, and that the eye had been treated in a way not recommended by any authority, consequently there would be a possibility of being mulcted for damages by an intelligent American jury; 2, I want to see my patient every day, and if something different is not done at each visit from that which the nurse did, many families not understanding the importance and danger threatened would think that there was no necessity for the physician visiting the patient so frequently, if the nurse could make all the necessary applications of medicine. In this connection allow me to enter my most earnest protest against either strong solutions or the mitigated stick of nitrate of silver ever being used in any disease of the conjunctiva. It always does more harm than good, and in cases of purulent ophthalmia may be the cause of starting corneal complications, which it is our great object to avoid. In cases where you are not called until the disease is well formed and the conjunctiva and lids are so swollen and edematous that they can not be opened, it is imperative that the outer canthus should be divided, and I would recommend that you go even a step farther than simple division and divide the ligament (if I may call it such) which holds or binds the upper lid to the outer margin of the orbit, so that all constriction is removed and thus free the cornea from this danger. The bulbar conjunctivæ should also be incised to favor the flow of their serum and thus lessen the chemotic condition. When the case is seen at the very start and before the lids and conjunctiva have become greatly chemosed and swollen, the above mentioned local medical treatment will cause the disease to abort in from three to five days, often within two or three days. In cases where the disease is in full blast with the conjunctiva and lids swollen, with a large secretion of pus, unless the corneal membrane has become affected all purulent discharge and swelling will disappear within a week. With this mode of treatment, as the disease abates, the conjunctiva presents an entirely different appearance from that which it presents under the ordinary manner of treatment, recommended in all our textbooks. It becomes smooth and presents a normal appearance, like to what it was before the attack. Its mucous surface presents no velvety or villous appearance with deep sulci between the swollen papilla and folds of the membrane.

My experience and results with the treatment proposed have been so satisfactory that for several years past, when I have had a patient with one eye affected with purulent ophthalmia I have not in any case taken the precaution to hermetically seal the well eye, nor have I in any case applied leeches, nor has the well eye become affected. The integument of the lids of the affected eye should be frequently dried and anointed with lanolin or something similar in order to prevent excoriations and irritation of their dermal surface.

By employing the treatment recommended in this paper you will find that, if sufficiently early employed, it will prevent chemosis of the conjunctiva and swelling of the lids if they have not already taken place. It will prevent the formation and secretion of pus, and dividing the outer commissure of the lids or incising the chemotic conjunctiva or applying leeches. In cases where the disease has reached the acme, with greatly chemosed conjunctiva, large quantities of pus secreted and swollen lids, if the cornea is still intact, I have never seen it become affected when this treatment has been followed; but on the other hand the chemosis of the conjunctiva, swelling of the lids and secretion of the pus have rapidly disappeared, leaving no impairment of the eye. In regerd to the complications that may arise from the cornea becoming affected it is only necessary to say that when this membrane does become affected the manner of management and treatment is sufficiently described in all ophthalmia text-books and it would be a waste of time to repeat them.

Since Von Graefe's time and because he recommended it, every writer writing a text-book has extolled the virtues of chlorinated water in the various forms and stages of this disease. After a faithful trial of it, in many cases, it has proved extremely unsatisfactory in my hands.

There is no doubt that many cases of purulent ophthalmia in the new-born child, can be prevented by proper washing and cleanliness of the parturient tract before birth, and proper washing of the infant's eye, before washing any other part of the body. I am prepared to go farther than this and say that with the care above mentioned of the mother and child, and a drop of this yellow solution instilled into the infant's eye three or four times daily for the first three or four days of its life, that there would be no more cases of purulent ophthalmia in new-born children, and our blind asylums would be deprived of 25 per cent. of their inmates, thus bringing untold blessings and happiness to these poor unfortunate ones who pass their lives in darkness, a burden to themselves and their friends. You may think that I am too much of an enthusiast for this treatment, and that it is impossible to obtain such wonderful results. To those who doubt and question that such an effect and results can be obtained, I can only say try it on your cases of purulent ophthalmia, and you will become as strong a believer and enthusiastic as I am. You will feel like publishing it from the housetops as a blessing, and a prevention of misery to our fellowmen.

DISCUSSION.

DR. H. V. WURDEMANN, Milwaukee—The result of any method of treatment depends upon the stage of the disease in which the same is used and the condition of the tissues. I consider the cleansing method of treatment with very weak solutions of corrosive sublimate or nitrate of silver the most important. I can not conceive that in all cases it would be possible to obtain such flattering results as reported by Dr. Scott by any method of treatment. All cases may not be aborted as is evinced by the occurrence of ophthalmia in the hands of our most antiseptic accoucheurs. I call to mind several cases. I am inclined to take the middle ground, and while always endeavoring to protect myself in the family by explaining the fearful nature of the disease, I have never yet, in a comparatively large experience with this disease during the last few years, had a case

go on to destruction or injury of the cornea where it has come into my hands at a sufficiently early date, before ulceration of the cornea had ensued. Despite this, I do not forget the fact that cases have occurred and have been reported by some of our foremost men in which the child has been properly attended from the inception of the malady and yet which have gone on to destruction. As has been noted, some of these patients are subjects of general cachexiæ and such, as I have had reason to note, are apt to prove intractable to any form of treatment. We should be a little careful in setting forth such rose-colored views of the question as have been advocated by the author of the paper lest material injury be afforded some of us by the occurrence of one of these unfortunate cases. I, for one, can not say that I have ever seen a case "aborted" where the disease had so far advanced as to be recognized by the family or attending physician and consultation called. Those of you having had experience in urethral therapeutics will agree with me when I say that after the first manifestations of gonorrhea have appeared, the disease is seldom or never aborted, although testimony to the contrary has been brought forward. Such is, however, not the general experience. The disease may be mitigated and its course shortened by treatment. I am pleased to see Dr. Scott makes no distinctions in purulent conjunctivitis of infancy; these are almost invariably gonorrheal in origin and are to be treated upon the lines laid down for that disease. We can not do away with nitrate of silver, which used after suppuration has been well established is of marked benefit. This may only be applied by the physician or a trained nurse. I am particular about instructions to the attendant as regards thorough cleansing away of the pus. I consider that no hard instruments, such as droppers or brushes should be given into unskilled hands during the course of this disease, for the slightest abrasion of the cornea means infection of that structure and probably irreparable damage. Soft pads of absorbent cotton soaked in the solutions and the latter dropped into the eye for cleansing, and atropin when necessary in the form of an ointment are the least dangerous ways of applying the necessary medicaments. All manipulations by the attendant should be done with the utmost gentleness and thoroughness.

Dr. A. Barkan, San Francisco—I regret that Dr. Scott does not substantiate his statements with proper statistics. As he still continues the application of nitrate of silver many of us will go on and think that that remedy is the mainly curative one. We all know the excellent effects of nitrate of silver in blennorrhea neonatorum. Why should not the same remedy act beneficially in purulent ophthalmia in the adult?

Dr. Starkey—I fear that I must come under the number spoken of by Dr. Scott, just at the close of his paper, who are skeptical as to the uniformly good results obtainable by any means, but shall gladly follow his injunction and try his method and hope to be convinced. My experience has been such in these cases, both in the new-born and in adults, that I can not take a very rosy view of the prospects of recovery in any case of purulent ophthalmia that comes under my care. It seems to me that, as was said in this Section last year, the only time in which purulent ophthalmia can be treated with universal success is before the disease occurs; when infection has actually occurred, it seems to me that a certain proportion of eyes will be lost by any treatment yet devised. Take a poorly nourished and perhaps premature infant with this disease—an infant that under any circumstances has all that he can possibly do to live, and the prognosis is exceedingly grave. We must all of us have seen such patients, with little discharge, easily controlled, also little swelling of the lids and little chemosis in which the cornea seemed to melt away from lack of nutrition. No pressure, no maceration with pus and yet no nutrition. Now it seems to me that we should be very careful about asserting that all eyes with purulent ophthalmia can be preserved by this or that treatment. Such statements reach the public and may come up to confound us after we have had one of these unfortunate results.

Dr Kaspar Pischl—May I call your attention to the publication of Prof. Burkhardt, of Berlin, who has a very extensive experience in purulent ophthalmia of young persons? He has discarded the application of ice and the use of strong solutions of nitrate of silver. He lays particular stress upon the removal of the gonococci from the conjunctival sac. For that purpose he instills into the inner corner of the eye, nitrate of silver 1 per cent. solution, and moves the lower lid rapidly up and down so that the fluid is thrown under the upper lid, and the cul-de-sac is thus thoroughly cleansed. This is repeated several times a day.

Dr. J. D. Ennis Arnold—The method of treating purulent ophthalmia, advanced by Dr. Scott, appears rather a step backward than a step in the advance; and yet I fancy we all feel inclined to make a trial of these medicaments, though the disease under consideration is one in which time lost in going after strange gods is likely to be fraught with dreadful consequence. The trend of modern treatment in all local disease is not the blind adoption of a fixed method with increasing faith in the power of a medicament to correct or cure the disease, but rather the rational adoption of procedures that have for their object the removal of material which we believe to be causative factors in producing the disease. In purulent ophthalmia we dare not destroy the living bacteria present, nor dare we even use substances able to prevent their multiplication, *in situ*.

By frequent cleansing all *materies morbi* must be removed from the conjunctival sac, and by punctilious vigilance we must stand always ready to prevent impairment of function by forestallment of tissue destruction. To-day there would be little excuse for him who would allow a corneal ulcer to penetrate spontaneously the anterior chamber, or for him who failed to relieve by section the pressure that threatened to produce tissue necrosis. The Credé method with the eyes of new-born children, is not a treatment of purulent ophthalmia, but an attempt, and nearly always a successful attempt, to prevent purulent ophthalmia.

Dr. Scott, in closing—Gentlemen, I am not surprised at the remarks made about this treatment. It is simply because you have not had any experience with it. The books say it is generally four or five weeks in the most typical cases. I have not lost a single case with it, if I got the case sufficiently early. It is miraculous how quickly the discharge disappears. I do not get any of the indications of the ordinary treatment The conjunctiva is comparatively smooth. If you will try it, every one of you, you will be just as much an advocate of it as I am. I have taken ordinary cases of pure ophthalmia in the new-born child, and in four days had them perfectly well. I do not believe the nitrate of silver has anything to do with it. I know this has been used in gonorrhea where in three or four days it stopped entirely. There is not a particle of pain in its application. In my own individual case I have used it. I had a very severe attack in my head, an immense secretion of matter from the head and nose. I tried everything to control it until I used this solution and in two doses it disappeared. It seems to be antiseptic, to destroy the formation of pus, and to act beneficially upon the mucous membrane and secretion of pus. Try it thoroughly and you will be just as much an advocate of it as I am.

CONSERVATIVE TREATMENT OF WOUNDS OF THE EYE-BALL.

Read in the Section on Ophthalmology, at the Forty-fifth Annual Meeting of the American Medical Association, held at San Francisco, June 5-8, 1894.

BY LEWIS H. TAYLOR, M.D.

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I do not propose to weary the members of the Section by attempting to discuss the subject of wounds of the eye-ball in all of the phases which that subject might present, nor will I even enumerate

the varieties and grades of these injuries, but will confine my remarks briefly to a consideration of some of the more serious forms, such as penetrating and lacerated wounds involving the iris and lens.

Living as some of us do, either in mining or manufacturing districts, we are frequently confronted with eye injuries of all grades, from the small cinder lodged upon the cornea, which in its effects is oftentimes by no means small, to the severe laceration of cornea, lens, iris and sclera.

The important question that at once arises is, to what extent shall I interfere with this eye? and how far dare I trust to the recuperative powers of nature to bring about a good result? We are taught in some text-books that if the iris is prolapsed, at once excise it. If the wound is a penetrating one and into or near the ciliary body, enucleate the ball in order to save the other. I can not in all cases agree with these teachings. I have had a number of serious injuries to deal with, in which the iris was involved in the wound and let alone with as good results, or better, than in similar cases where an effort was made to remove the adherent portion. It is difficult to remove the portion of the iris entangled in a bruised or lacerated wound, by iridectomy, and unless seen very early after the accident our patients will probably fare as well if the iris be left alone and allowed to heal over, fastened in the wound, as if we attempt its removal. I say, unless seen very early after the accident; I might say, if seen very early, the removal is not usually necessary, for it may oftentimes be replaced and freed from its entanglement in the wound. One of my earliest cases of this sort illustrates the latter statement:

Case 1.—Mr. H. came to my office within a few hours after receiving a severe blow upon the eye from a chip of a steel hammer. This had penetrated the cornea, wounded the iris and apparently the lens, the iris being fastened in the wound and protruding from the eye. After cleansing the eye I used a small spatula and gently replaced the iris, the pupil contracted and under a light compress bandage the eye made a most excellent recovery with normal vision.

I spoke of the lens being apparently injured, and yet there was no resulting opacity. I have repeatedly seen the same in injuries in which the capsule was undoubtedly penetrated and yet the wound healed without leaving any lens opacity. This point was ably brought out in a paper read before this Section by Dr. Milliken at the Detroit meeting in 1892, on "Injury to the Lens."

Case 2.—Martin S., age 33, came May 24, 1892, directly from the mines where he had been injured an hour or two previously. Examination of the eye showed a wound in O. S. through the sclera near the sclero-corneal junction, the iris being fastened in the wound and pupil irregularly ovoid. V. reduced to merely counting fingers. I had him go into my lavatory and thoroughly wash face and head, then after using cocain, I replaced the iris with a small spatula but it would not fully return. I dropped in eserin freely, put on a compress bandage and gave bromid and morphia to be used if necessary. On the following day he returned with pupil contracted but irregular. Iris not fully replaced but as the wound had closed I made no attempt at further replacement but used atropia instead of eserin. On May 27 he was doing very well, pupil well dilated and iris drawn away from the wound so that the pupil was slightly dilated and was irregular. V. had now risen to 20-C. From this time on the eye rapidly healed and the patient recovered useful vision with a natural pupil.

This would have been an excellent case in which to follow the teachings of the books and excise the protruding iris, and yet if it had been done, nothing would have been gained and much lost. Indeed it is a serious question whether we do not do more harm in such cases by an iridectomy than we do good. If the cause of the injury remains in the eye it must be removed, unless it has penetrated so far that its removal is impossible, in which case enucleation will sooner or later become necessary.

Dr. H. Knapp, of New York, at a meeting of the American Ophthalmological Society in 1893, in discussing his paper on "Traumatic Dislocation of the Iris," says: "Now something about prolapse of the iris in eyes that have been injured. This is an exceedingly important matter, and I have made it a rule not to touch a prolapsed iris unless I could get it entirely fresh. I have never seen sympathetic ophthalmia where there was prolapsed iris which had not been wounded by the injury or by the surgeon's knife. If cases come in the first four or five hours, where a clean iridectomy could be made and I am sure that the foreign body was not an infecting one, then I make an iridectomy. If they come some time afterward, I leave the prolapse alone for it is very difficult to get at the lateral portions which will be incarcerated in the corners of the wound, and if operated on they are more apt to be followed by sympathetic ophthalmia or purulent infiltration than if left alone."

Case 3.—This is an exceedingly interesting one, on account of the severity of the injury and the high grade of astigmatism developed by it. It will not be necessary to relate all the details of the case. James McC., age 31, was a blacksmith, and on May 18, 1893, went into the mines to shoe mules. He had finished his work, and was standing in the center of the hoisting carriage at the foot of the shaft ready to start up, when a piece of coal fell down the shaft from above, struck a slanting board, and glanced off and directly into his eyes causing the wound. He came to my office about three and a half hours after the injury with V. in right eye reduced to mere perception of light. The wound was a formidable one, being through the cornea about one-eighth of an inch from its outer border, extending entirely across this portion of the cornea and into the sclera above and below, also involving iris and lens. I used cocain thoroughly, cleansed the eye with Panas solution, replaced the iris with spatula, used eserin and bandage. On the following day, the iris was again found caught in the cut and pupil ovoid, and again replaced. Same on third day when I again replaced it and began using atropia. From this time on the healing though slow was steadily progressive and he made an excellent recovery but with a slightly ovoid pupil. On July 14 the right eye showed, with the ophthalmometer, 12 D. of astigmatism, ax. 120, and the left eye none. With a correcting glass —7 cy. ax. 30 ⊃+5 cy. ax. 135 (not right angles). Vision was nearly 20–40. The patient now considered himself well and I have not seen him since.

Case 4.—Nicholas K., age 20, came Aug. 27, 1890, stating that O. D. had been cut about quarter of an hour before, by a piece of steel which had been driven forcibly against it. V. in O. D. *nil.;* in O. S. 20-70. Inspection at this time showed the right eye already congested and somewhat painful. A cut in the horizontal meridian of the eye, starting about one-eighth of an inch from the corneal margin extended backwards three-quarters of an inch and penetrated through all of the tunics of the eye into the vitreous which was exuding from the cut. There was some hemorrhage into the eye, and it was impossible to tell whether the foreign body which caused the mischief was still in the eye or not, but from the patient's description of the accident, I concluded that it had fallen out at the time. The eye was very carefully washed out with Panas solution, the protruding vitreous snipped off, atropia instilled and a compress bandage applied. Morphia was prescribed to be used if needed for pain, and a very guarded prognosis given. August 28 reports that he slept well without morphia and had but little pain. The pupil is about half dilated and chemosis is already considerable. On the third day he reported that he had slept well each night and had not found it necessary to use the anodyne at all. The chemosis is now considerably less and the eye is doing well. In addition to the atropia, which

was used every three hours, I cleansed the eye each day with Panas solution and he used cold applications at home.

September 2. Is improving nicely; swelling is nearly all gone and he begins to see dimly; counts fingers. September 9. The eye is doing very well; the cut through the sclera has closed entirely; the blood has largely absorbed, but nerve and vessels can not be distinctly seen with the ophthalmoscope. The anterior chamber has been clear all the time. The pupil is dilated and he counts fingers at one foot. Discontinue atropia and use Panas alone. I last saw the patient on September 27, at which time the eye was looking well but from the excessive wound the scar contracting seemed to lessen the size of the eye in comparison with its fellow. He could now count fingers readily, the eye looked well and he had returned to work. I presume vision still further improved. I recently heard through another patient whom Mr. K. had sent to me, that he was doing well and his eye was all right.

Case 5.—Wound through sclera into vitreous. This illustrates one of the most serious types of injury and the preservation of useful vision was very gratifying to both patient and physician. Harry E., age 20. I was called to see the patient in consultation at the request of his attending physician, Dr. G. W. Guthrie, Oct. 6, 1890, about 9 o'clock in the evening. The history obtained at that time was, that he had been unpacking a barrel of bottled ale in the grocery store where he worked. The barrel was turned over on its side and the patient was leaning over it; while in this position, one of the bottles rolled out and against another causing an explosion and a shattering of the bottle struck. A piece of glass flew up and struck him above the eye, but he could not tell whether it had fallen out or not. (The piece was subsequently found stained with blood.) Inspection showed a ragged wound in the right upper eyelid about three-quarters of an inch from its margin and in a line midway of the two canthi. This cut extended through the lid, through conjunctiva and sclera, into the vitreous. The wound in the globe was about one-quarter of an inch from the bulbar-tarsal fold and extended downward nearly one-half inch and to right and left the same distance, forming a rough jagged opening exposing the vitreous beneath. Not knowing whether the glass had fallen out, and not being able to decide as to its presence with the ophthalmoscope on account of hemorrhage, I gently explored the vitreous with a sterilized strabismus hook, but could detect nothing. It now seemed advisable to close the wound, and not having at hand any very fine catgut, we used silk. A suture through the sclera tore out immediately, so two sutures taking a sufficient amount of tissue were inserted into the conjunctiva, drawing it firmly together over the exposed vitreous. Vision in O. D. *nil*. O. S. not taken. The eye was thoroughly irrigated with Panas solution, the external wound in the lid closed with catgut, dressed antiseptically, and both eyes bandaged. A very guarded prognosis was given. The patient was left in charge of Dr. Guthrie, his family physician, who removed the bandages and carefully dressed the wound daily. October 9. I saw patient to-day in Dr. Guthrie's absence. Doing well, free from pain, very little swelling, but conjunctiva intensely red, evidently subconjunctival hemorrhage. October 11. One stitch removed from the conjunctiva, the other could not be found, having probably dropped out at one of the dressings. He can now count fingers dimly, eye is free from pain and is not so much injected. October 16. Ophthalmoscope shows large floating shreds; details of fundus can not be made out. Conjunctival wound has healed kindly and congestion is passing away. He has been remarkably free from pain throughout, considering the serious nature of the wound. Atropia has been instilled once daily; now discontinued. October 25. Now comes to my office; pupil is well dilated. The eye is looking very well. Nearly all of the redness is gone, some congestion remaining over the wound. He counts fingers dimly at one foot. Sees large objects dimly. Ophthalmoscope now shows the red reflex but no details of fundus. Still keeps it bandaged. V. in O. S. 20–xxx. November 17. Now goes without the bandage and is doing very well. Counts fingers directly in front of him. V. 2–C. Sclera wound entirely well. December 11. O. D. 20–C., O. S. 20–xxx. Selects O. D. + 1.75 cy. ax. 75. 20–40 and on December 18, with + 25 = + 2.25 cy. ax. 75; V. = 20–xxx; some in xx. O. S. Selected + 37 cy. ax. 90; V. = 20–xx. The eye was now thoroughly well and to all appearances the same as the left. He had excellent vision with the correcting glass, and an eye saved that according to many, ought to have been enucleated at the start.

This last case illustrates the wonderful recuperative power of the eye if it can be kept clean. This eye at first sight seemed to be in a hopeless condition and yet ended with most excellent vision.

Case 6.—Emil B., came Nov. 20, 1891. O. S. was cut in the morning about 8:30, with a piece of steel from a wedge which he had struck with a sledge-hammer. The wound extended through the cornea, iris, and edge of the lens and the iris was fastened in the corneal wound. Under cocain with a spatula, I partly replaced the iris, but as the wound had commenced healing this was somewhat difficult. I instilled a few drops of a 2 grain solution of eserin and had the patient wait an hour, at which time the iris was partly drawn away from the wound. I then instilled more eserin and gave him atropia to use at home. On the following day the pupil was three-fourths dilated but not round, rather ovoid, and I feared traumatic cataract from the wound of the lens. Continued atropia and in six days the eye was entirely clear. Another illustration of the fact that lens wounds sometimes heal without forming cataract. I saw the patient three months later when he called with a foreign body in the other eye. The left eye was entirely well. V. 20–xxx and only a slight scar remaining to mark the original injury.

I have a number of other cases, Mr. Chairman, but it is useless to occupy the time of the Section in a rehearsal of them. I have selected a few illustrative ones. I have also many others in which the prolapsed iris has been cut away, and in some of them with excellent results but in some, I am sorry to say, with such results as to leave me in doubt as to whether I had done just the right thing in attempting to remove the prolapsed portion.

Dr. Noyes says: "The danger consequent upon prolapsus iridis increases with its extent and its nearness to the ciliary body. Traumatic prolapse is more dangerous than anterior synechiæ resulting from inflammation and perforation. A wound through the limbus and extending into the ciliary region demands abscission of all tissues which present." My own experience, however, inclines me to conservatism, and I strongly believe that a large number of these cases will do as well or better if the iris be replaced so far as it can be and let alone, as if we attempt to remove it.

DISCUSSION.

DR. BAKER—Mr. Chairman, I am firmly of the opinion that many of us have removed eyes that might have been preserved. While the dangers of losing both eyes from sympathetic inflammation are very serious, I do not think that we should upon first seeing an eye and recognizing that there is a very serious injury decide on enucleation. During the past two years I have had two cases which illustrated this matter very forcibly. First, a boy about 12 years of age who had gone to one of the rod mills in the city. The iron rods as thick as your finger come out of these mills and shoot very rapidly forty or fifty feet across the room. One of these rods struck this boy in the eye, making a large opening in the lower part of the cornea through the sclerotic, so large that your finger could be very easily passed through this opening. Almost one-half of the circumference of the blow seemed to be torn open; the vitreous was protruding. I immediately proposed enucleation of the eye. The parents refused. I then put in a few stitches and brought the wound back as well as possible. To my surprise it healed and there is not a particle of reaction from it. I used eserin instead of atropia. The case went on to uninterrupted recovery and though the field was contracted the vision was almost perfect, that is he could read something like twenty or thirty feet, but the field of vision was contracted. I have watched this case since and have seen no bad results following.

A few months since a patient came to me for enucleation of the eye; he was engaged in ship building. A bolt had been knocked off and struck the lower lid, puncturing it and

making a very large opening in the sclerotic, almost as large as in the boy's eye. It was one of those injuries in which it seemed as if the whole eye had escaped. The iris seemed almost collapsed. The patient was very anxious to save the eye, if possible, and following the experience I had with this boy, I adopted the same line of treatment and used the eserine. This case ran along to almost uninterrupted recovery. I am certain that two or three times in my life I have removed eyes with similar injuries while in these cases I have, so far, had no bad results. The same thing is true with regard to injuries of the cornea. If it does involve the ciliary regions to any great extent, we can often save the eye where we are confident there is no foreign body and with the means we now have. In most of these penetrating wounds, in these large manufacturing centers, the foreign body is a piece of steel or iron and by the use of the magnet we can often exclude the foreign body in the eye. I think we should make an effort to preserve some of these eyes that formerly we should have removed.

DR. BRIGGS—In my earlier experience I have neglected eyes that I at present would treat, conservatively however. In case of prolapse of the iris, if I saw it when the iris could be returned I would certainly return it. I believe the danger in those cases is from infection, and the danger of infection is greater if the iris remains prolapsed than if returned. If I could not return it without too much violence to the iris, if it were not prolapsed to a considerable extent, I should use the galvano-cautery. In that way, I believe the danger of infection is lessened. In regard to the treatment of penetrating wounds, I think we are all becoming more conservative. Often we can preserve eyes from which we can extract foreign bodies, especially a piece of steel, with perfect vision. I have several such cases with almost perfect vision from which I have extracted pieces of steel, and in some of those cases, I have either excised pieces of iris or returned the prolapsed iris.

DR. SCOTT—Mr. President, the trouble I have had with prolapsed eyes has not been so much sympathetic ophthalmia, as I have had four cases of severe ophthalmia. One a case which had prolapsed eyes. I desired to remove the collapsed piece and they would not consent to it. All these cases of injury about the ciliary regions have been a source of great anxiety to me, and especially when the wound has healed and there is a contraction of a scar. I have seen few of these cases that have not been followed sooner or later by sympathetic trouble, and ultimately require enucleation.

Lately I had a very interesting case of injury; a man found a railroad torpedo and burst it open. It exploded and a piece of it went into his eye. I removed the prolapsed iris, and the lens seemed to be transparent. There was considerable hemorrhage and I questioned whether the piece had gone into the eye. I kept him under observation two or three weeks, and finally the eye-ball commenced to shrink. I advised him to have enucleation, and removed his eye a few days before I came away, and found that a foreign body had passed completely through the eye and lodged opposite the optic nerve, passing through the posterior part of the eye in contact with the optic nerve, so that when I came to cut through the optic nerve I found there was a foreign body to cut through. This piece was twice as large as a grain of wheat. I do not understand how that could pass through the lens and the ciliary region and the lens remain perfectly transparent, three weeks after the accident.

My experience in all injuries with the eyes is that injuries in the ciliary regions are much more serious than in any other. Also, I believe it is better where we have prolapsed eyes, unless we can easily reduce it, to remove them.

DR. H. H. WEER—Mr. Chairman: I recently had a case of a man attempting to drive a nail. The nail flew up and struck him across the ciliary region, curving through the corner downward and outward. The aqueous humor at once discharged. He had to take hold of the nail with his fingers and pull it out of his eye. He then hunted for the nail in the dark, found it, drove it into the board, went into the house and retired. He suffered no inconvenience. Next morning he went to the nearest physician, who put him in his carriage and brought him to me. I saw that there had been a complete opening into the anterior chamber. There was hemorrhage in the anterior chamber. Fortunately the wound closed and the aqueous humor reformed. Having been taught by Dr. Rosie, in injury across the ciliary region, denominated by him "the danger line," to call for immediate enucleation, I used 4 per cent. solution of atropia in order to save my iris. When I next saw the patient I noticed that there was discoloration of the lens. The lens was in the anterior chamber. I made preparation for enucleation, when they came again. I found that the crystalline lens had retired from the aqueous chamber and out of sight. I was also met with a flat refusal to enucleate the eye. The case in my estimation was one of ocular anesthesia. That man never had a particle of pain. There was a greenish tinge to the iris. I repeatedly asked him if he had pain, any neuralgia of the forehead, nasal, temporal or molar, and I failed to get any indication of pain. I had the patient still under observation and the question in my mind was, the crystalline lens having retired within the vitreous chamber, whether or not it would be safe for me to attempt to take out that crystalline lens, running the risk of losing the vitreous, or whether I had better enucleate or await developments. I am still awaiting some symptom of danger. I still have the chance to take the alarm at the earliest moment. If the alarming symptom comes I can then enucleate at once. I merely wish to put myself on record as being one in favor of conservative surgery in injuries to the eye-ball.

DR. L. R. RYAN—I can recall a case that occurred a few months ago. A man was chopping a piece of wood and a splinter produced an injury to the cornea that prolapsed the iris. The prolapse was returned and by the use of eserin for several weeks the wound healed kindly and there were no symptoms of inflammation. I had two or three other cases treated in the same way, and it seems to me that eserin has a more important place in the treatment of the eyes than we attribute to it. It prevents the tendency to glaucoma, which is apt to follow any inflammation of the iris where we use atropin alone. If we would confine ourselves to eserin in connection with atropin in iritis, or inflammation of the iris from disease, our results would be far better than they are at present. That has been my experience in the last two years.

DR. TAYLOR—Mr. Chairman, I read by paper most hurriedly from the fact that there are several papers to read yet. It will not take a long time to discuss it. I do not wish to make light of the danger which every injured eye has; the danger from sympathetic ophthalmia. That is the danger, and yet if we keep that eye under observation we are ready at any time it becomes necessary to treat it. Oftentimes, our patients leave us and we fail to see them in time and it becomes too late. I recall to my mind one case of injury to the cornea, not apparently a very serious injury. The patient was doing, as I thought, well. It was a case in which there was no pain, and so the patient who thought she was doing well enough staid away. She came back in two or three weeks, and I found sympathetic ophthalmia had developed in the other eye and advised enucleation. The patient said: "No, I would rather be blind than have my eye taken out." She would not have it taken out and she is totally blind to-day in both eyes. And yet, the case

was not one in the first place that any one would have thought of enucleating. It was a case of neglect, not neglect on the part of the doctor, because he had no chance to see the case, as the patient did not come back.

I merely wanted to call attention in the paper to the fact that as it was said by our chairman, I believe many eyes are enucleated which might be saved, keeping in mind the serious dangers in cases like those Dr. Scott has mentioned. If a foreign body remains in the eye, the eye must come out sooner or later, but if we are sure the foreign body is out, then I believe we should wait a reasonable time unless the eye is injured to such an extent that it is hopeless. A paper by Dr. Geo. H. Powers, of San Francisco, entitled "Some Cases of Unusual Reflexes from Pathological Ocular Conditions," was then read by title and referred to the Publication Committee.

A paper by Dr. A. G. Hobbs, of Atlanta, Ga., entitled "The Use of Galvano-Cautery Knife in Pterygium Operations," was also read by title and referred to the Publication Committee.

THE TREATMENT OF PTERYGIA WITH THE GALVANO-CAUTERY.

Read in the Section on Ophthalmology, at the Forty-fifth Annual Meeting of the American Medical Association, held at San Francisco, June 5-8, 1894.

BY ARTHUR G. HOBBS, M.D.

ATLANTA, GA.

I shall not presume that it is necessary in describing this method of operating on pterygia to even enumerate the many already in vogue. I should rather ask your forbearance for merely suggesting to you that yet another method is to be added to the list already, perhaps, too long; still it may be true that each of these operations has served its purpose in turn in the process of evolution. Since it is the cardinal point in making a pterygium operation to prevent two raw surfaces from remaining in apposition after the operation, which necessarily results in the relapses which we too frequently see, why not then convert each of the raw surfaces into an eschar at once to avoid such failures, provided we are able to demonstrate practically that this means will bring about that desired result?

For some years the galvano-cautery point has been resorted to in corneal ulcers, particularly in those indolent and intractable ulcers which have refused to yield to other methods of treatment. It was suggested to me a few years ago, after seeing some of the beautiful results of the cautery when applied to ulcers of the cornea that it could, at least, produce no bad results if properly applied to the neck of a pterygium for the purpose of cutting off the nutrition of its corneal apex. I hoped that it would prove a better means of severing the arterial supply to the apex as it crossed the sclero-corneal junction. This object is generally attained by the use of the knife and various methods have been resorted to, to accomplish the purpose. The failures in pterygium operations are usually due to the resulting reëstablishment of the arterial circulation, and when this occurs the desired end of the operation fails in proportion to the number of the reëstablished vessels. The great vascularity of a pterygium, with its vessels crossing over the sclero-corneal line to supply its apex on the cornea, renders it difficult to permanently sever all the arteries by a clean cut with the knife, hence perhaps a score of different methods of knife and scissors operations have been resorted to by different operators to accomplish this end.

Each operator aims at one end primarily, and that is to completely cut off all the blood supply from the corneal apex. Secondarily, his desire is to destroy as little conjunctiva as possible. When the first end is attained, the corneal part of the pterygium has lost its direct nutrition and can then only share with the cornea proper for its sustenance which is indirect, or by imbibition. As this meager supply proves insufficient atrophy results and the partial, or almost complete, obliteration after a time will depend upon the activity of the absorbents. For this reason the best results are obtained in younger subjects in which as a rule, the lymphatics are more active, as is also the contractibility of the arterial coats.

In many cases when the knife is resorted to a secondary pterygium results in which sufficient nutrition is reëstablished to the apex to perpetuate the corneal haziness even beyond its apparent margin to greatly interfere with vision. When the cautery section is well made I have not seen these secondary results that are often so difficult to prevent by a clean cut with the knife or scissors. In some cases, however, it may be best to combine the methods of operating as I have done in two cases not included in this report. These two pterygia were extremely vascular and muscular, hence I first used the knife in the usual way and then seared the divided edges with the cautery blade to prevent the secondary results.

The fine-pointed cautery blade, heated with a battery that can be perfectly gauged and always relied on, is applied horizontally to the narrowest portion of the growth which is near the sclero-corneal line; the touch is made at the moment white heat is reached and should be almost instantaneous and reapplied as quickly, if the tissues are not at first completely severed. If the growth is not adherent to the sclera and corneal margin it is best to grasp it with small forceps and slightly raise it from the sclera. When the forceps are used it is easier to be certain that the cautery has made a complete section of all the hypertrophied and over vascular conjunctival tissue.

When the corneal head is large and protruding it is advisable to make a cautery application in the same manner as in applying it to a corneal ulcer. In both cases the resulting cicatrix is less—it is more transparent. This is not altogether an unknown fact but one that has seemed never to have been brought out as prominently as its importance would suggest. For this reason one may be tempted often to resort to the cautery to reduce a large pterygium apex or a corneal ulcer, for the purpose alone of attaining this corneal transparency. The resulting eschar so completely severs the vascular connection, leaving no raw surfaces in apposition that a reëstablished circulation is practically impossible; this can not be said when the knife or scissors have been used. In case the redundancy of tissue at the point of section should seem to require reduction, the scleral end of the section may be turned under and a transverse suture introduced.

I have made this operation fourteen times, and would have made it half as many more times during the last two years but for that decided objection to the cautery which we so often meet with and are bound to respect. This operation is more quickly

performed; it is followed by no bleeding; it leaves no ecchymosis; the wound heals more rapidly; there is less pain during and after its performance; it requires no bandages and the corneal haziness around the apex is less.

A weak solution of cocain, about a 2 per cent. is first dropped into the conjunctival sac, then after about five minutes a stronger solution, about 10 per cent. is applied at intervals, locally, by means of a small cotton probe for five minutes more; in the meantime the lids are held open. By this means the toxic effects are avoided except in those subjects that are unusually susceptible to cocain. In using cocain in this latter strength I try to avoid as much as possible, by the position of the patient, its contact with the cornea. It is now a well-known fact that when used in this strength, or even when much weaker, that this drug is disastrous to an abraded cornea if long continued.

The kind of galvano-cautery apparatus, the ease of its manipulation, the size of the blade, the confidence of the hand that presses the button, the requisite degree of heat which should be gauged by the turn of the screw are some of the necessary factors in this seemingly simple, yet delicate little operation, whether it be made to a corneal ulcer or to the neck of a pterygium. The only galvano-cautery apparatus in my knowledge that I would now be willing to trust for this purpose is a little transformer of an alternating current of fifty-two volts.

I am now using, in my consultation rooms the first two little instruments ever made for this purpose. I described the varied uses and advantages in a paper read before the Pan-American Congress last fall. So far as I know, the galvano-cautery has not hitherto, been used as a means of cutting off the nutrition of the corneal apex of a pterygium.

RELATIONSHIP OF OPTIC ATROPHY TO LOCOMOTOR ATAXY.

Read in the Section on Ophthalmology, at the Forty-fifth Annual Meeting of the American Medical Association, held at San Francisco, June 5-8, 1894.

BY H. I. JONES, M.D., L.R.C.P.E.

MEMBER AMERICAN MEDICAL ASSOCIATION, CALIFORNIA STATE MEDICAL SOCIETY AND SAN FRANCISCO COUNTY MEDICAL SOCIETY.

I desire to point out the special features of the relationship of the optic atrophy to ataxy, and have a case to demonstrate my topic:

J. W. H., aged 37, native of the United States. Past history: He has suffered for the last five years from rheumatic pains in various parts of his body, and from nervous twitching, lightning pain in leg, trunk and arms. No history of syphilis. He has used tobacco and stimulants freely. About a year ago he was advised to go to Paso Robles Springs and use the mud baths for his rheumatic pains; no relief was obtained; a few weeks after his return he complained of defective vision, first of the left eye, then the right. Jan. 31, 1894, when he first came under my care, I found that he was totally blind and suffering from a rapid nystagmus, and lightning pain in both legs. Ophthalmic examination showed atrophy of both optic discs; owing to the rapid movement of the nystagmus it was very difficult to make a thorough examination of the fundus. Physically he is in perfect health. He has Westphal's symptom, absence of the knee reflex, but lacks the tabes gait; he tells me that his gait has always been normal. Many patients see no relation between their pains and their amaurosis or ataxy, especially if these pains come on, as in this case, years before. He has Argyle Robertsons symptoms. Under treatment he has made slight improvement. Nystagmus is less, he can see shadows in my office; for instance he pointed out a picture frame in my consulting room. To test him and to show that it was not visionary, I requested him to walk up to the picture and place his hand on the left hand side of the picture, which he did. Treatment has been both local and constitutional. Locally, blisters to the cervico-dorsal region, leeches to the temple, cautery of the spine, galvanic and faradic currents. Internally, strychnia sulph. hypodermically, and by the stomach arsenite of strychnia, pilocarpin, iodid of potassium and proto-iodid of mercury.

There are few diseases which present such a multiplicity of symptoms as are found in locomotor ataxy. This patient was totally blind when he came to consult me, so I could not test his field of vision, which is a very significant symptom in cases of atrophy in tabes. There is an intimate correspondence between the development and functions of the brain and those of the optic nerve and retina; the connection is still increased by the communication which exists between the lymph spaces of the eye and those of the brain and spinal cord. These anatomic conditions not only account for the occurrence of neuro-retinitis and other ocular changes in disease and injury of the spinal cord, but a Polish physician has traced a connection between errors of refraction and curvature of the spine. The eye is not a separate autonomous organ, living as it were a life apart, nor is it a mere appendage or accessory, convenient and advantageous to the rest of the organism; on the contrary it is in closest relationship with the rest of the body, and participates in its moods. Erb tells us that a brisk cutaneous irritation causes the pupil to enlarge; pinching a comatose man will often enlarge the pupil, but the pupil in tabes is not affected by such procedure.

In all cases of atrophy of the optic nerve we should inquire for lightning pains, test the knee reflex, whether gait is normal or not. The pains are often the bridging symptoms betwixt so-called uncomplicated amaurosis and tabes. Charcot and others attribute the cause of optic atrophy to gray degeneration and to be parenchymatous. The eye-ball and its appendages draw their blood supply from two main sources, the internal and external carotid arteries. By means of the blood vessels and the fluid which circulates within them, foreign or other morbific material may be carried along the blood current into the eye.

The eye and its appendages receive the whole or part of six of the cranial nerves, as well as many fibers of the sympathetic nerves which influences the nutrition of the eye, controlling the size of the blood vessels, and regulating the size, equality and mobility of the pupil. That a certain portion of the spinal cord exercises a direct influence on the eyes has been incontestably established by experiments of modern physiologists. Brown-Séquard demonstrated that the filaments of the sympathetic that supply the eye take their origin from that part of the spinal cord which is contiguous to the origin of the first pain of dorsal nerves, and that portion of the spinal axis which extends from the fifth cervical to the tenth dorsal vertebra possesses a distinct influence on the organs of vision, and has been termed by physiologists, "cilio-spinal" and sometimes "oculo-spinal." The conclusion that must necessarily be deduced from these observations is that the portion of the spinal cord, "oculo-spinal axis," includes within itself both vasomotor and oculo papillary filaments; which are connected with the cervical portion of the sympathetic. It is not surprising, therefore, that the eye is very susceptible to all those influences, healthy and morbid, which affect the nervous system generally, or the special innervating apparatus of the eye,

either at the center, the periphery or in any part of its course. The special feature in this case is the absence of the gait.

DISCUSSION.

DR. YOUNG, Burlington, Iowa—Some years ago, we had an interesting paper on myopia. At that time I had an illustrative case, and can now recall five cases which might be considered under this head. I want to give the Section, briefly, some peculiarities observed in the five cases. Two were cases in which rapid optic nerve atropia came on, and they went blind in a very short time. In those cases there was absence of the reflex and some of the other symptoms of dorsalis, but we could never make out a plain case. A few other cases of unmistakable dorsalis have come under my care and observation. Typical cases have had no eye symptoms whatever. The fifth case had typical dorsalis as the result of an injury, and he had rapid, progressive optic atrophy and became entirely blind. The question arises, Should we not make a better classification of dorsalis in connection with eye symptoms than we have at present? Are we to expect in all cases our visionary image of cases? I think not. My observation would be like this: Where we get typical dorsalis as the result of direct injury, traumatism, I should look for it. In pure asthenopic dorsalis where the symptoms come on with staggering gait, pains, etc., I have come to the conclusion that we can correct it very often.

A NEW AND CONVENIENT ARRANGEMENT OF ROTARY PRISMS.

Read in the Section on Ophthalmology, at the Forty-fifth Annual Meeting of the American Medical Association, held at San Francisco, June 5-8, 1894.

BY EDWARD J. BROWN, A.M., M.D.
MINNEAPOLIS, MINN.

After much suffering from heterophoria and more or less satisfactory effort to relieve such trouble in myself and others, I hailed the paper of Dr. Geo. M. Gould as a ray of genuine daylight, and at once put his theories to the test. The results in my own and a good number of other cases have been highly satisfactory.

As a means of carrying out the Gould exercises, I found the prismatic arrangements at my command very cumbersome and unsatisfactory. Dr. Gould's double battery of forty prisms seemed altogether too unwieldy for convenient use. It at once occurred to me that an arrangement of rotary prisms, like Stevens phorometer, except that they should revolve in opposite directions, would answer the indications perfectly. With the assistance of Mr. Carl Thayer, a local jeweler, I have constructed an instrument which I find very useful. It consists of two 30 degree prisms mounted on two clock wheels, geared together so as to rotate in opposite directions, on a brass plate. The prisms are rotated by a handle firmly attached to one wheel, and a pointer and scale indicate at a glance the power of abduction and adduction in a given case, with a range from 0 to 60 degrees.

By a simple arrangement one prism may be disconnected from the other, and revolved alone for the purpose of measuring the strength of, or exercising the vertical muscles. A clip might be easily added to hold a third prism base up or down, but I find it better in practice to use neither device, but to exercise the vertical muscles by slightly revolving the instrument in abduction or adduction in the horizontal plane, by means of a narrow vertical crossbar which serves as a means of suspension above and a firm handle below. The whole is suspended from a swinging arm, and by means of a simple automatic clamp easily placed at the height of the patient's eyes. It might equally well be swung from the ceiling with a weight and pulley. The instrument serves perfectly its purpose whether we choose Gould's system of over-weighting the muscles, or Savage's rhythmical exercise.

I find in practice the best plan to be a modification combining the advantages of each, *i.e.*, rotating the prisms slowly up to and beyond the patient's power to fuse, when he closes his eyes for a few seconds and the prisms are again placed at zero.

In some cases this over-weighting, even for once or twice will cause a severe headache, and there is consequently need of a wise discretion in its use. This is especially true of forced adduction, or sursumduction with the *rotary* prisms, since the unbroken and gradual increase of prismatic strength adds decidedly to the ability to overcome the prisms.

Gould advises the use of his method in accommodation. A decided advantage of the rotary prisms is that in most cases sufficient strain can be put upon the muscles at twenty feet. A further advantage is the low cost of the instrument, which ought not to exceed $10.

As regards results I will only mention two out of many cases. In one, after several months ineffectual use of rhythmical exercise, adduction was brought by Gould's method and rotary prisms from 6 degrees to 80 degrees in four weeks; and in a second, adduction of 10 degrees was brought to 70 degrees in two weeks, the patient having no other than a few moments' exercise daily at my office.

DISCUSSION.

THE CHAIRMAN—There is a matter which I think the Executive Committee have to bring before the Association. The Secretary has just gone out to call them in to report.

DR. STARKEY—Mr. Chairman, while waiting, I would like to suggest that we should have a time set and an invitation extended to members who have any little device that they are using that others may not have, that they should bring it here and show it to the other members. I find as I go about that I frequently run across something that I wonder I had not thought of, which some one is using constantly and supposing every one else is using the same. I think we should assist each other in every way as much as possible.

A MEMBER—Was there any report from the committee on the subject of blindness? There was a committee appointed last year. Dr. Howe, of New York, was chairman.

THE CHAIRMAN—I might say that a great deal of work has been done by this committee; I was chairman of the committee that was appointed in Ohio to secure the passage of a law similar to that in New York City and we went to Columbus and secured such a law in Ohio. A similar law has been passed in four or five other States and an effort will be made to secure the passage of some such law in all the States.

A MEMBER from Iowa—Mr. Chairman, I went to Des Moines and labored very hard with our Legislature, and got the Committee of the Senate to decide favorably upon a law. That is all that ever came of it. We kept it grinding as long as we could, and finally the thing fell through, and I do not look upon it as very favorable toward getting any legislation in Iowa.

DR. SOUTHARD, San Francisco—That matter was brought

up here. I had considerable correspondence with Dr. Howe, as did other members in California, and formulated a law based upon a law passed in Maine. Maine has the best law of all. The New York men voted for it and in New York within the last month or two there has been a conviction under that statute. Here in this State it was brought before the State Medical Society. I spoke upon it before the Society, and we hope it will receive a favorable hearing in our Legislature next session. I think that California will come into the line as a State that is willing to pass laws in the interests of humanity as soon as any other State in the Union. I assert that in this matter of legislation we are working for the cause of humanity, and that we can not do anything detrimental in asking the assistance of those who are willing to give their time and energies to obtaining laws that will be for the benefit of the rising generation. And I hope that this Section will indorse any movement or law compelling every child when it comes to school to bring a certificate stating that its eyes are in proper condition for carrying on its work. Whatever may be our theories in regard to statistics, we know what takes place among children on account of their bad eyes, and we know that the attempt to do this work can not be injurious, no matter what our personal ideas as to statistics are, wherein those errors exist and are detrimental. We know that many a bright child has been thrown out of school, and many a bright young man has had to leave his career, and as old Dr. McKenzie used to say: "All such are advised to go to Australia by the cheap route." I do not believe any one can object to voting for resolutions that will permit us to ask for such legislation. Some of us are anxious to see what we can do in California, and would like to go to our friends in the State and say that we have the indorsement of such a learned body as this. We expect to learn and have learned a great deal from the visiting members, and we want their assistance in doing these things for the best in the future. I would like to have the sense of meeting as to the indorsement of the course that we are trying to take.

A MEMBER, Southern California—Next month the Southern California Medical Society meets in my town. They have a larger membership than any society in California. We have a membership of nearly one-fourth of the regular physicians in our District, comprising seven counties of the southern portion of the State, and each one of those counties representing more territory than most of the Eastern States. We have an enthusiastic Society there and one which could be interested in this movement. I do not want to crowd anything on the Section without proper deliberation, but if this Section were willing to pass my resolution of indorsement, which we would prefer should come from some other State than California, I could take that resolution into the Southern California Society and get their coöperation in that work. It would be a long step in the direction of educating the people along an important line. Our Legislature in this State meets only once in two years. If nothing is done now, we can secure no action before two years this coming winter. If we can organize now, it is probable we can move upon a line that will commend itself to every member here, of securing something which will educate the people up to the wrong they are doing to all the children when they let them do work they are not able to do without severe suffering.

DR. STARKEY—Mr. Chairman, to bring that before the Section I move the following resolution:

"*Resolved*, That it is the sense of the Section on Ophthalmology of the AMERICAN MEDICAL ASSOCIATION, that for the good of children, the eyes of all children should be examined before beginning their school life."

DR. ELLIS—Mr. Chairman, while I am heartily in sympathy in this matter I do not think it would be policy for us to adopt such a resolution. While it undoubtedly would be for the good of the children, I think if such a thing were done it would have the appearance at least before the California Legislature, with whom I have had some experience, of simply drumming up business for the oculists. Now there would be just as much sense in the Section on Orthopedics or General Surgery to ask that a law be passed that the backs of all the children be examined to see that there is no spinal trouble, or that the hip joints be examined to see that there is no trouble there, and so on. While I do acknowledge that it would be to the advantage of the children, I do not think it would be to the advantage of the Section to take any action.

DR. SIMONTON—It seems to me that the gentleman who has had the floor has not got the gist of the motion; the motion is not that a law be passed. It is that it is the opinion of this Section that it would be well that the children be examined. As the motion now stands, I can heartily vote for it—that we think it would be well for the children. If there was a resolution urging the Legislature to make such a law, making it compulsory, then I should oppose it. I think whenever we undertake such things as that we get ourselves into deep water. The public objects even to vaccination. When we talk about compulsory vaccination that seems to be un-American to a great many people. They think their liberties are being abridged in some way or another. I vote for the motion that it is the sense of the Section that it would be well for the children if their eyes were examined before entering the schools, but not to suggest legislation on the subject.

THE CHAIRMAN—I think before this question is voted upon, we should have the report of the Executive Committee bearing upon this subject. It would be to our interest.

A MEMBER—Mr. Chairman, the report of your Committee appointed to select the subjects for consideration for next year is as follows:

Examination and Care of the Eyes During School Life.

Methods of Examination.

Instruction of Teachers and School Authorities and Local Provisions.

Suggestions as to the Members of the Committee—Dr. W. F. Southard, Dr. Young, Burlington, Iowa; Dr. A. R. Baker, of California; Dr. Geo. H. Price, Nashville, Tenn.

A MEMBER, Southern California—Mr. Chairman, I wish to take issuance with Dr. Ellis, of Los Angeles, with reference to the question, and urge the Section to adopt the resolution. I believe thoroughly as Dr. Simonton has said, that it commits the Section to no action and no indorsement of any action towards the securing of legislation. That falls to the share of the individual workers in the State. I believe a great deal can be done in the way of educating the people up to an understanding of the conditions by a fight, even if it is an unsuccessful fight before the Legislature. Attention will be called to the fact that legislation is believed to be necessary by a considerable body of the people, and more attention will be paid to the question. I have taken no part in the discussion of the paper delivered to-day. I have taken great interest in the work and have done work in my own country. I have been urged into it by regular practitioners, by superintendents of schools and county superintendents, and I have recognized the fact that the appearance was as if I was drumming up business, and yet I have scarcely met with any opposition on that ground, either among practitioners or educators, and have met so warm a feeling in favor of doing something, and so much interest among educators in the county that I am convinced much good can be accomplished, even by a losing fight.

DR. TAYLOR—Inasmuch as this Committee has suggested

this very topic for next year's discussion, and suggested a competent committee to prepare this subject, would this not come with greater force from this ASSOCIATION next year than at the present time, if it should come after a full preparation of the topic, and a full discussion in the report of this Committee? I suggest that it be deferred for the present, inasmuch as this is a special topic for next year.

DR. ELLIS—The Secretary might be instructed to refer it to that committee.

DR. SOUTHARD—You do not assert that it means that this body of men here is not competent to claim that they believe it is well to examine children's eyes? President Jordan said to me within a few weeks that he never realized in his life the importance of this until recently, and he was very earnest in the hope that something would be done, and that I would continue to work in this line until something was accomplished. I would like to be able to go to teachers and others and say that our Ophthalmology Section does agree with me and others in the fact that it is well to have children's eyes examined. I should think we might have indorsements in that way, to assist us to carry out what we have already started upon. I believe that now is the time for commencing the work. It is simply a little indorsement I want from you in my lectures throughout the State.

DR. COE, of Seattle—We have our teachers' associations throughout the State, and local meetings of teachers, and if this matter can be brought before the State Societies, we can get the general practitioners interested in that matter. As has been stated, Dr. Jordan even was ignorant of the dangers to be incurred through these troubles. So you find it everywhere. I have no hesitation in trying to educate the public to this view of the matter and I think if we can only adopt this resolution it will come with added force when we take it into our State Society.

The question was then put on the amendment to postpone until next year and the motion was lost.

DR. STARKEY—I have no desire to push this matter but I thought, simply as an educational measure, it might be well to have it for use during the year without postponing.

The question was then put on the original motion and carried.

The Secretary then read a letter from Dr. Savage of Nashville, suggesting that the Section extend an invitation to the International Congress of Ophthalmology to hold its next session in this country and requesting to be appointed a delegate.

DR. TAYLOR—I do not know whether this is a matter to come before the Society or not, but I suggested the reading of this letter so that it may be brought up. Probably Dr. Jackson can tell us something about this Society, so that we will know whether it would be proper for us to take action.

DR. JACKSON—I think this Congress met in New York in 1874. A Congress met there which was practically one of this series of international congresses. So far as I know, the place of meeting of the Congress has not been determined by any invitation of the Society, but by the invitation or upon the solicitation of members from a certain place who were present at the meeting. The Congress is not a representative body at all. It does not invite delegates from other associations. It has a different basis of membership. There would be a good many members of the AMERICAN MEDICAL ASSOCIATION who intend to be present, many of the most prominent members of the ASSOCIATION, but they have none of them asked to be appointed delegates to this meeting. While Dr. Savage may be as good a man for a delegate as anybody else, I do not see that we can appoint him simply because he suggests it. To appoint delegates where delegates are not invited, would be rather undignified on the part of the Section. The question of the invitation is a different question, I am sure, if it is the feeling of the Section that it would be well to have the Congress meet here the next time it meets. But I think we would not improve the chances of our getting the Congress by extending a formal invitation. If the members who attend will extend the invitation as members of the Congress, they will be more likely to get it than if a formal invitation were extended by this body.

THE CHAIRMAN—American delegates, as a rule, are received over there very coldly. It has been the custom for so many years for men of ordinary talents to secure appointment that they have grown to look upon them in rather an unfavorable light.

On motion duly seconded and carried, the following resolution was adopted and the Secretary was instructed to forward the same to Dr. Savage:

"*Resolved*, That inasmuch as this Section has no representative in the International Congress of Ophthalmology, it is not deemed advisable that we appoint a representative."

The Secretary then read the minutes of this and the previous meeting.

A vote of thanks to the retiring officers was then carried and the Section adjourned.

THE SWEAT-SHOPS AND SMALLPOX IN CHICAGO.

BY BAYARD HOLMES, M.D.

PROFESSOR OF SURGICAL PATHOLOGY AND BACTERIOLOGY IN THE COLLEGE OF PHYSICIANS AND SURGEONS OF CHICAGO.

There is before me a document very significant to medical men. It is the first special report of the Factory Inspector of Illinois. This fifty-seven page pamphlet is a fair exposition of the condition of our western metropolis during the smallpox epidemic of the past winter and spring.

All of our readers may not know that a law was passed by the last Illinois Legislature defining the sweat-shops and denying the manufacture of clothing except by the residents in any room used for domestic purposes. This law also provides that all workshops and factories shall be open to inspection, and when articles manufactured in them have been found infected with vermin or with infectious or contagious matter, they shall be reported to the local health officer to be destroyed by him. Now it appears from this report that there are about 950 licensed shops in Chicago and 25,000 other rooms in which garments are made. The principal Factory Inspector, Florence Kelley, and her ten assistants, have had enough to do to enforce the other provisions of the law, especially in preventing the employment of children under 14 years of age in the factories; nevertheless in the fall of 1893 a few cases of smallpox appeared in Chicago. A Sister visiting the smallpox hospital on Twenty-sixth Street and Sacramento Avenue, had smallpox in Rock Island after her return, and a number of cases appeared in various parts of the State, but through the efficient efforts of the State Board of Health none of them became epidemic.

In January there was a real epidemic in the region of the Chicago smallpox hospital, and the local health officers began to show some activity. The smallpox hospital, which only needs to be mentioned to be condemned, soon became full to overflowing, and the death rate was enormous. The people began to refuse to be removed from their homes and cases

were concealed from the authorities. At last the place became so overcrowded that no more cases could be taken at the hospital and yellow cards were tacked, usually on the back doors or hidden sides of houses, in which smallpox was found.

The duty of the Factory Inspector evidently called upon her to protect the consumers of ready-made and custom-made clothing from the danger of smallpox contagion carried by the clothing they purchased from sweat-shops in which contagion existed; therefore she informed the 176 wholesalers and merchant tailors who have their work done by sweaters, that smallpox was epidemic and that there was danger of infection, and called attention to the provision of the law for the destruction of infected goods. Only a few of the manufacturers paid any attention to the suggestions of the Inspector and various other means were taken to secure compliance with the spirit of the law.

The first goods were actually destroyed by Health Commissioner Reynolds at 699 Allport Street, on May 12. In the meantime sporadic cases of smallpox appeared almost everywhere in the Western United States. The activity of the State Boards of Health was aroused in adjoining States, and a conference was held in Chicago May 10. The result of this conference was a contribution by the manufacturers of clothing, who employed Chicago sweaters, of several thousand dollars to be expended in the inspection of sweat-shops and in the vaccination of their workers, all to be done under the direction of the Illinois State Board of Health. In other words, the State of Illinois undertook to guarantee the non-infectious condition of the clothing manufactured in the sweat shops of Chicago for a gross contribution of $5,000. How unsuccessfully this was done, indeed, how absurd the proposition was, and how much the country has been exposed to smallpox thereby, is shown by this report as well as by the spread of smallpox over the territory in which Chicago clothing is sold. As concrete instances are much more suggestive than any abstract dissertations I could prepare, let me copy the following cases from the Inspector's report:

May 13, 1894. John Cerenak, 645 Throop Street, coat-maker for A. A. Devore & Sons, Michigan Avenue, corner Adams Street; Inspector Bisno.

The Inspector found in Cerenak's shop, which is one of his living rooms in this tenement house, a coat for the Devore firm in process of manufacture on Sunday, May 13. A boy lay dead of smallpox on the same premises after several days' illness. The man declined to name any other owner for the coat than himself, and was notified by the Inspector not to remove it until it had been fumigated.

May 14. The firm of A. A. Devore & Co., were notified from this office of the facts in Cerenak case and replied by letter that the coat belonged to them and that they would rather it should be destroyed than returned to them.

May 15. An order was served on Commissioner Arthur Reynolds, to condemn and destroy this coat in accordance with Section 2 of the Workshop law. Dr. Henry Reynolds accompanied Inspector Bisno to the premises and demanded the coat from Cerenak, showing him the letter from Cerenak's employers, A. A. Devore & Co., asking for its destruction. Cerenak refused to give up the coat unless paid $16 for it and for making another one which had been returned to the firm previously. Dr. Henry Reynolds then went away, saying to Inspector Bisno that he would return for the coat the next day, bringing police to take it if necessary. Some days later he informed Inspector Bisno that he did not go back for this coat and did not know what, if anything, had been done with it. It was then too late for inspectors from this office to trace the coat, which had disappeared.

This shows where one of the most aristocratic tailors of the city has his coats made and it also shows the inefficiency of the Department of Health.

May 22, 1894. Anton Randa, 1636 West Twenty-second Street, custom tailor, for Kelley Bros., merchant tailors, 268 South State Street; Inspector Bisno.

The Inspector found Randa's shop in his living rooms in a cottage basement. There were nine people in the family, five of whom, Randa's wife and four of his children, were sick with the smallpox. The four small rooms are used for eating, sleeping, living and manufacturing, and in the room used for a shop are two machines, three chairs, two tables and one bed. No goods were found in the shop, nor was Randa there, but as the Inspector was informed by Randa's child, he had gone after more work. The five smallpox patients were at this time in the house.

At 8 P.M. the Inspector returned to Randa's house, found him and learned that the patients had been removed to the pest house. Randa at first insisted that he had not had any work for six months, but finally admitted that he had worked for Kelley Bros., 268 South State Street; that he had delivered to them a coat very recently and that he had also taken from them one coat to make on this day, May 22. Where this coat was he absolutely refused to tell, nor could Inspector Bisno find it on the premises.

May 23. Inspector Stevens went to the store of Kelley Bros.; neither of the partners were there; this case was reported, as above, to their cutter, and an order on Randa for the coat in his possession was obtained. This cutter also told Inspector Stevens that the other coat had been returned by Randa on Thursday, May 17, and had been delivered to a customer. The Inspector asked for the name and address of this customer, which the cutter claimed not to know.

An order was issued for Commissioner Reynolds to destroy, in accordance with Section 2 of the Work-shop law, any goods in process of manufacture found in Anton Randa's possession. Inspector Bisno, accompanied by two agents of the Board of Health, returned to 1636 West Twenty-Second Street and gave Randa the order from Kelley Bros. for the coat. Randa then took them to 1616 West Twenty-second Street, on which premises he had concealed the work, and produced it. They found a boy in the family where this coat was concealed who appeared to have smallpox, and the Inspector remained there until a district physician was obtained, who diagnosed the case as smallpox.

The infected coat was then taken to an adjacent vacant lot and burned by the agents of the Board of Health in the presence of Inspector Bisno.

The district physician having given his opinion that the coat returned by Randa to Kelley Bros. on Thursday, May 17, was undoubtedly in an infected condition, Inspectors Stevens and Bisno went to the store of Kelley Bros. to make another attempt to trace the coat. This time one of the partners was in the store; he was told of the destruction of the coat found hidden at 1616 West Twenty-Second Street and of the circumstances under which the coat, returned to him on May 17, was made. Inspector Stevens then told Mr. Kelley that the district physician had decided that this coat was also infected and again asked for the name and address of the customer who had received it. Mr. Kelley replied that the coat was still in the store and that he was willing that it should be destroyed. When told that his cutter had that morning reported the coat was delivered to a customer, Mr. Kelley replied that this was not so; that the coat was still in the store.

May 24. An order was issued for Commissioner Reynolds to destroy this coat in accordance with Section 2 of the Work-shop law. Inspector Bisno went with the two agents of the Board of Health to Kelley Bros'. store, where they were given a coat which the city agents burned in the presence of Inspector Bisno.

Can the dangers of tenement house manufacture be more drastically manifested? Randa concealed from the merchant tailors who gave him the coats, the fact that smallpox was in his family, although even while he returned work to them and received

more from them, five victims of the disease lay in the tenement rooms where the work was done. Again he concealed the work from the State Inspectors, and in so doing exposed it still further by hiding it in another house where also there was smallpox.

April 30, 1894. J. Kolka, 625 W. Twenty-first Street a coat-maker for Pfaelzer, Sutton & Co., Franklin and Van Buren Streets; Inspectors Stevens and Bisno.

This shop is in the rear of Kolka's living rooms on the first floor; the entrance is by a side door used also in going to the living rooms. The Inspectors found Kolka and his wife, with two men visitors in the shop, and sixteen coats for Pfaelzer, Sutton & Co., in process of manufacture. The living rooms of the Kolka family were closed and in process of fumigation. A 10 year old son of Kolka died of smallpox on Saturday, April 29. The fumigator from the Board of Health had left the premises before the State Inspectors reached it, but he had not fumigated the shop nor disinfected the coats, telling the Kolkas that it was not necessary, although the parents of the child had attended their patient and worked on the coats at the same time. The Inspectors asked Kolka when he returned the last work to the firm employing him. Kolka does not talk English easily and Mrs. Kolka, who attends to that part of the business, positively asserted that it was several weeks since they had any work except the sixteen coats then on the premises and that none had been returned since the boy was taken sick.

Inspector Stevens reported to Pfaelzer, Sutton & Co., the infectious condition of the sixteen coats on Kolka's premises, and received their promises not to accept the goods until said goods had been properly disinfected. The Inspector repeated to them Mrs. Kolka's assurance that no goods had been returned to them since April 13 and requested them to ascertain from their books if this was correct. The books showed that Mrs. Kolka had returned to them sixty-one coats on April 23, while smallpox was in the house. They were enabled to identify the coats by their ticket system, and as these coats were in a separate lot they requested that these also might be disinfected and agreed to keep them boxed away from other goods until this was done.

Inspector Stevens went from Pfaelzer, Sutton & Co.'s store to the Board of Health and finding Commissioner Reynolds absent, reported this case in detail to Secretary McCarthy of the Board, receiving his assurance that both lots of goods should be disinfected the next morning.

May 5, Mr. Meyer, from Pfaelzer, Sutton & Co., after waiting five days for the City Board, reported to this office that no one from the Board of Health had yet visited their place; that the sixty-one coats were not yet disinfected; that the sixteen coats had been returned from Kolka without the knowledge of the firm, and that they feared these also were not disinfected. At his request, Mr. Meyer accompanied Inspector Stevens to Commissioner Reynolds office to inquire why the disinfection had not been done as promised by Secretary McCarthy. Neither Commissioner Reynolds nor his Secretary had any excuse to offer. They did not know why no fumigator had been to the business place of Pfaelzer, Sutton & Co., and had no records to consult to show whether the shop and coats at 625 West Twenty-first Street had been fumigated. The Inspector finally succeeded in getting a reluctant promise from Secretary McCarthy that the two lots of coats at Pfaelzer, Sutton & Co.'s should be fumigated that (Saturday) afternoon or Monday morning. In the presence of the Inspector, Secretary McCarthy tried to dissuade Mr. Meyer from having this done, because of the trouble involved.

May 7. Inspector Stevens visited Pfaelzer, Sutton & Co. in the afternoon and found that the city fumigator had not yet been there; then visited Secretary McCarthy and gave him until 9 o'clock the next morning to fulfill his promise.

May 8. At 10 o'clock a message was received at this office from Pfaelzer, Sutton & Co. that the fumigator was there.

The utter inadequacy of the measures taken to prevent the spread of infection by these seventy-seven coats is apparent. The Kolka boy was sick a week before a doctor was called, when the child was dying. Before the report of the diagnosis reached the City Board of Health, or this office, the child was dead and buried. It was nine days after this before the City Board of Health fumigated the coats and fumigation, under these circumstances, can by no means be considered a guarantee of disinfection. These goods should have been burned, but the Commissioner of Health refused to comply with the Section of the Work-shop act, which enjoins the Board of Health to condemn and destroy goods under such circumstances.

May 14, 1894. John Smethoma, 1189 Albany Avenue, contractor for A. L. Singer & Co., 168–170 Market Street; Inspector Kelley.

Dr. Brand telephoned that he had found bundles of goods for manufacture on the premises of John Smethoma which he believed to be infectious for the following reasons: An undertaker, now living at 1117 Albany Avenue, had occupied the premises at 1189 Albany Avenue. One of his children had the smallpox there and recovered without the fact becoming known to the Board of Health; then another son was taken ill and the family was removed to 1117 Albany Avenue, where the second child died of smallpox. After the undertaker moved out of 1189, John Smethoma moved in, occupying the same flat which had not been fumigated and using for a shop a room to which the undertaker's family had free access throughout their illness. Dr. Brand had notified Smethoma to hold the goods until further notice.

May 15. Inspectors Kelley and Bisno, went to 1189 Albany Avenue and found the shop empty and Smethoma sitting in the street in front; he denied that he had had any work within four months and said that before Christmas he worked for A. L. Singer & Co. At this office his name was found upon the list of Singer's employes. The firm was then notified as follows:

Messrs. A. L. Singer & Co., 168–170 Market Street, Chicago.

Gentlemen:—There is smallpox at 1189 Albany Avenue where one, Smethoma, is working for your house. There has been infection on these premises since April 1, at least; one death and a series of smallpox cases. Day before yesterday, goods in process of manufacture were found in the shop and the man was ordered not to remove them until they had been disinfected; this morning we find that the goods are gone; they must have been returned to you or left in some other place, perhaps secreted in another equally infected place. Kindly let us know by bearer if these goods have been returned to you and if you have any other goods made up by this man in your stock. To prevent the spread of infection the goods the man has disposed of, must be found and taken care of in the proper manner.

Yours very truly,

FLORENCE KELLEY.

The following reply to this letter was brought back by Inspector Hickey:

A. P. Stevens, Assistant Factory Inspector:—We have not received any work from Smethoma, 1189 Albany Avenue, since April 26. We will find out if expressman delivered any work this week.

Respectfully yours,

A. L. SINGER & Co.

Later the following was received from this firm on the same date, May 15:

A. P. Stevens, Assistant Factory Inspector:—Since your man called here this afternoon, we have found that the expressman delivered to Smethoma, 1189 Albany Avenue, twenty-three men's coats and twenty-seven children's coats on the 11th inst. Respectfully yours,

A. L. SINGER & Co.

May 16. Mr. A. L. Singer brought Smethoma to this office to state where the Singer goods were secreted; at this time Smethoma's own child lay dead of smallpox at 1189 Albany Avenue the death occurring this morning. Inspector Hickey went with Smethoma to see where the goods were hidden and reported that they were in barrels packed in a loft of a barn or shed on premises at 1189 Albany Avenue, with empty barrels piled on top of those in which the goods were hidden. Inspector Hickey reported also that on the way to locate the goods the man Smethoma entered two drug stores looking for a doctor to make arrangements for the burial of his child although, as he informed Inspector Hickey, he had not had his clothes off nor had he washed for three days during which he had attended the child now dead.

At 3 o'clock on this day (May 16) the Singer goods in Smethoma's possession were burned by an Agent of the Board of Health, in Inspector Hickey's presence, and with a mob of Smethoma's neighbors surging about the place

On this day the records of the Board of Health show that there were three new cases of smallpox at 1189 Albany Avenue. To this date there had been at no time any effort to quarantine the place

May 29. Smethoma came to this office to get permission to resume work and produced the following certificate:

May 28, 1894.

To whom it may concern :—This is to certify that the store 1189 Albany Avenue has been fumigated on May 17, and no more smallpox exists about the place. He can be allowed to resume business. W. E. MILLER, M.D.,
Medical Inspector Health Department.

The Health Department records show three cases of smallpox at this number May 17, and one new case on May 22, again in the family of Smethoma the tailor. Including the two cases in the undertaker's family, which were not made a part of the Health Department's records, there were seven cases of smallpox, at least two fatal, on these premises in May, yet this shop certificate was issued by a city district physician, that work could be resumed there during that month. It can hardly be needful to state that this permission to resume work was not indorsed by this office.

The history of this shop is the history of the fatal concealments incident to tenement house manufacture. The undertaker concealed from the Board of Health the fact that smallpox was in his family. The incoming tenant, Smethoma, was therefore not warned that there had been smallpox there in the family of the out-going tenant, the undertaker. Smethoma in turn concealed from A. L. Singer & Co., for whom he worked, the fact that there was smallpox in his family on May 16, and concealed their work on his premises from the State Factory Inspectors.

When it is considered that there has been throughout the epidemic in the Bohemian sweat-shop district, concealed cases of smallpox, so many that the district physician in charge once stated to an inspector, his belief that there were at that moment not less than five hundred cases within a radius of six blocks, the painful conviction forces itself upon us that the Smethoma case is typical of many which, with all our efforts, we failed to reach.

The inspection of the sweat-shops has been entirely ineffectual so far as concerns securing safety to the consumers of Chicago made goods. The appearance of smallpox in the better part of the city has not, so far as the writer knows, been traced to coats or other clothes made to order, but it seems incredible that such a source could not have been traced from some of the very many, otherwise unaccountable, cases which occurred last winter in respectable families.

There are many reasons why the public was not informed on this subject at the time; the principal one lies in the utter servility of the press to trade. There was at all times, during the epidemic, the greatest difficulty in getting the columns of of the daily papers open to smallpox news. The conspiracy of silence was almost impregnable. In this conspiracy it seems very strange that the Commissioners of Health should have been involved but Inspector Kelley says, Section 41:

After June 10, the Board of Health adopted an avowed policy of concealment. From this time the lists of new cases, which had before been imperfect from a lack of system and of responsible book-keeping, were rendered absolutely worthless by order of the Commissioner of Health. District physicians were notified to give out no more information and the city hall lists were reduced to two cases per day. One example of suppression of cases may serve to show how far this policy has been carried. Since it was inaugurated three children of the McLaughlin family, living in a tenement house at 82 Brown Street, were removed to the pest-house on three different days. None of the three cases appear on any list. One omission may be explained away as accidental, but not three in the same family, the same house, the same month.

Throughout the epidemic there has been no mortality record by days or weeks from which we might have formed at least an estimate of the varying degree of danger. Admissions and discharges at the pest-house are known only to the Sister in charge of them, and the daily number has at no time been obtainable from the Health Department.

The yellow card which would be of inestimable use to us if posted, and kept in place upon infectious premises, as prescribed by the city ordinance, has been tacked upon rear sheds and in hall-ways, upon inside doors, up three flights of stairs and in many cases has never been posted at all. Cards have been torn down in scores of cases but not one prosecution has been instituted by the Board of Health for this serious offence against the public safety. Trade has been carried on in groceries, milk depots, cigar shops and drug stores, while the warning card was either gone altogether or carefully concealed in an upper story or a rear yard and customers, ignorant of their danger, visited the infected premises as usual. From this connivance of the local officials at the infamy of landlords and shop-keepers, the State inspectors have suffered with the rest of the community, finding cases too late to take any effective measures for the enforcement of the law, and often failing altogether to learn of the presence of smallpox until weeks after the burial of the patient. And this in spite of faithful daily searching in the infectious district.

The guarding against recurrence of the disease on the same premises with garment making, has been further hindered by the removal of the yellow card immediately after fumigation. Where a patient was removed in the morning and the premises were fumigated and the card removed in the afternoon, an Inspector calling an hour later would find no hint of danger and a sweater might go on with his work the next day undisturbed!

Throughout this whole epidemic the value of trade and the worthlessness of human life and health, in the estimation of those in authority, has been abundantly manifested. The pest-house would disgrace Siberia by its management; it was over-croweded beyond a military prison in war time; it received no proper medical supervision and aroused no effort to improve its condition.

In the State of Illinois, one hundred of the wealthy manufacturers have clubbed together to fight the constitutionality of this factory law. The brief which their well paid attorneys prepared for the Superior Court is before me. In it, property right and personal right over property, is the principal theme.

This review is written to arouse in medical men an interest in the protection of the consumers of sweat-shop made goods of all kinds; to show the utter wickedness and folly of allowing such manufacture at all; to stimulate an interest in factory legislation and to draw attention to the need of actual coördination of the various functions of the State for the protection of our coming generation and our own peace of mind. Unless we, the most altruistic of all the educated classes, the most in touch with the people, the best prepared to judge, interest ourselves in these maladies of the State, how can we expect any attention to them from the courts, the legislature or the clergy?

CAUTERIZATION OF THE NARES, AND ACCIDENTS THAT MAY FOLLOW.

Read before the Annual Meeting of the Illinois State Medical Society, Decatur, May 15-17, 1894.

BY E. FLETCHER INGALS, A.M., M.D.
CHICAGO.

Although from time to time articles have been written to show that serious accidents, often follow cauterization of the nares, I think that, when properly done, this operation is quite as free from discomfort or danger as any other minor surgical procedure.

I have occasionally heard of serious results following these operations, but have never had one in my own practice, and I believe that as a rule they are due to carelessness or inexperience upon the

operator's part which induces him to make extensive wounds or to repeat the burnings too frequently. By this I do not mean that all accidents after cauterization have resulted from carelessness or inexperience, for I well know that bad results after any operation, from various causes, may possibly happen to any one, even though the utmost caution is observed.

Looking over the records of my private patients, I find that in hypertrophic rhinitis, intumescent rhinitis, and simple chronic rhinitis, cauterizations have been done about one and one-fifth times on the average in each patient. I find 1,450 patients with hypertrophic rhinitis who have been cauterized 1,950 times; 450 patients with rhinitis intumescens, cauterized 150 times; and 700 patients with simple chronic rhinitis, cauterized 150 times; making 2,600 patients cauterized 3,000 times. These figures are not strictly accurate, but are as near as can be computed without actually counting the cauterizations done in each and every case.

Excluding the cases of simple chronic rhinitis (which have not been frequently cauterized). I find 1,900 cases suffering from hypertrophic or intumescent rhinitis, that have been cauterized 2,850 times, making an average of about one and one-third for each patient. An examination of these records, which have been carefully kept, reveals no serious accident in any case. With comparative frequency, probably in about 20 per cent. of the cases, especially when the cauterization is done in cold weather, patients suffer considerable inconvenience for four or five days afterward from the reaction, and in a limited number of cases, perhaps 5 per cent. they feel for ten or twelve days afterward as though they had taken an intense cold in the head. In warm weather these very uncomfortable symptoms are not often experienced.

Frequently I have observed patients in whom a linear cauterization across the whole length of the inferior turbinated body would cause excessive swelling, obstruction of the naris, headache, and considerable fever which might last four or five days. In most, if not all of these cases, if cauterization of half this extent were made, the uncomfortable symptoms would not follow.

The inconvenience which patients suffer after cauterization, as a rule, depends largely upon the extent of the burn, the frequency of its repetition, and the care exercised to avoid taking cold.

I have frequently observed slight adhesions following cauterization, especially where it has been done opposite a large spur from the septum, and where the patient has not been able to call upon me within the next four or five days after operation. In none of these, however, has there been any difficulty in cutting the adhesion, or very great trouble in restoring the patulence of the naris.

In one case only do I find serious hemorrhage to have followed cauterization, and when the patient returned to my office this was checked without great difficulty. In a case of superficial cauterization for hyperesthetic rhinitis, not included in this series of cases, serious hemorrhage followed; but I did not see the patient for several weeks after the operation, and think it could have been easily checked if he had been under my care. In no other cases do I find that excessive bleeding occurred.

It is not improbable that in this number of cases there are those who have had slight inflammation of the Eustachian tube extending toward the middle ear, but I am sure that in none of them has there occurred inflammation of any importance, and I am unable at present to find records even of slight inflammation of these parts after cauterization.

The cases of inflammation of the Eustachian tube or middle ear that have been reported as having followed cauterization of the nares, I believe have in most instances resulted either from carrying the electrode so far back that the Eustachian orifice has been burned, from making an extensive wound and thus causing undue inflammatory reaction, or from neglecting antiseptic precautions, though such a result might follow from exposure or from peculiar predisposition of the mucous membrane to take on inflammatory action.

Inflammation of the tonsils is said sometimes to follow within a few days after cauterization of the nares, possibly having some connection with the operation, but I have seen no cases of the kind in which any evidence of cause and effect could be obtained.

Erysipelatous inflammation has been the worst sequel of this treatment that I have ever observed among my own patients, but it has occurred in only four persons out of 2,600. In two of these it seemed to have been the direct result of the cauterization, and in both of them it followed cauterization in the naris whenever it was done. In the other two the dermatitis came on at irregular intervals after the cauterization, and seemed to have been the result either of cold, or excessive inflammation resulting from some peculiar idiosyncrasy of the patient, either to the burn or to the remedies which were used subsequently.

In two of the four erysipelatous cases that I have seen, inflammation did not come on until from eight to ten days after the operation, and in one of these it recurred about a month after the cauterization, apparently in consequence of an oily spray which had been used in the nares. This appeared to me to be a case in which there was an idiosyncrasy either against the oil (liquid albolene), or the thymol or oleum carophylli which it contained in solution. In the other of these two cases, two cauterizations were done, one of which was followed by erysipelatous inflammation in about ten days, which appeared to me to be the result of an oily spray, similar to that used in the previous case. In this patient, redness of the upper lip and cheek continued for a number of days, and was found to increase when the oily spray was used, and to diminish when the cleansing of the nares was accomplished by a spray of saturated solution of boric acid. I have seen several persons in whom the use of a spray containing only two or three grains of menthol to the ounce would cause inflammation of the nostril and upper lip within three or four days. Dr. A. H. Gilmore reports to me a case in which acute dermatitis always followed the use of a one-grain solution of menthol and carbolic acid, each in an ounce of liquid albolene, within twenty-four hours.

In the two remaining cases the trouble followed closely upon cauterization, the patient seeming to suffer from a peculiar idiosyncrasy in which inflammation of the skin covering the upper lip, the side of the nose, and the cheek would follow speedily after any cauterization within the nasal cavity. In one of these, a healthy young man, 31 years of age,

suffering from rhinitis intumescens, who was cauterized four times, the erysipelatous inflammation succeeded the cauterization promptly within from twelve to forty-eight hours in every instance, but it was not very severe and only lasted from three to six days.

In the other of these cases cauterization was performed three times, and each time was speedily succeeded by erysipelatous inflammation. Once this came on the same night, the other times within a few days. These attacks gave the patient considerable inconvenience, but caused no danger.

In two instances I succeeded in reducing the inflammation speedily by the local application to the skin of pure guaiacol, recently recommended by L. Bard (*Lyons Medical*, lxxiv., 1893,) in facial erysipelas.

I have heard of so many cases in which serious, or at least very disagreeable symptoms have followed cauterization of the nasal cavities, that I am led to believe that the comparative infrequence with which such accidents have happened in my practice is largely due to the care exercised at the time of cauterization, to the antiseptic precautions by which it is followed, and to the rule (from which I seldom vary) that a second cauterization should not be made within from ten to fourteen days after the first. This allows time for the healing process to become well advanced and for all inflammatory action to subside before a new inflammation is set up. In a few cases, where for special reasons I have allowed myself to be over-persuaded by the patient, and have made the succeeding operation in the opposite nostril within from five to eight days, I have nearly always found that the patient afterward suffered great inconvenience from the obstruction, headache and fever. In such cases both sides are likely to become occluded as in severe colds in the head.

My usual course in the treatment of hypertrophic and intumescent rhinitis is as follows:

Having determined that the patient is frequently annoyed, especially at night, by stopping up of one or both nasal cavities, which interferes with nasal respiration and causes a collection of more or less mucus in the naso-pharynx, I recommend cauterization upon one side. Whatever subsequent cauterizations are needed should be made at intervals of not less than two weeks if upon the opposite side, or at longer intervals if upon the same side. Immediately after cauterization, the nasal cavity is sprayed with a solution of 5 minims of the oil of cloves to the ounce of liquid albolene, and this is followed by the insufflation of 2 or 3 grains of iodol. The nostril is then packed lightly with cotton, which the patient is directed to wear whenever he is out of doors for the succeeding four or five days in winter, and for two or three days in summer, changing as he may desire. The patient in most cases is also given a powder, one or two grains of which he is directed to use in the naris three or four times in twenty-four hours, providing the passage closes up by swelling—or not at all if this does not occur. This powder contains bicarbonate and biborate of soda, each 1½ per cent., light carbonate of magnesia 3 per cent., and cocain hydrochlorate 4 per cent., in sugar of milk sufficient to make 3i; this gives in all not more than from one-twentieth to one-twelfth of a grain of cocain daily.

This is applied by means of a glass tube about four inches in length, with a caliber of about one-eighth of an inch, to which is attached a rubber tube, through which the patient blows the powder into his nose. The glass tube is disconnected from the rubber, its round end moved about in the powder until it is filled up about one-fourth of an inch; the same end is then re-introduced into the rubber tube, and the flattened end of the glass tube introduced into the nostril. The patient then places the other end of the rubber tube between his lips and gives a quick strong puff; which forces the powder into the naris, some of it usually going through to the naso-pharynx. The patient is also given a solution of one-third of a grain of thymol with three or four minims of the oil of cloves to the ounce of liquid albolene, which he is to use in the nose thoroughly as a spray three times daily.

In many cases the cauterization is followed by immediate relief of the obstructed feeling in the nose, but in the majority the cavity is nearly closed much of the time for three or four days subsequently. The patient is directed when practicable to return to me in four or five days, in order that I may be sure no adhesions are taking place. At this time the powder just mentioned is reduced by the addition of 25 per cent. of iodol, and the patient is directed to use it for the next ten days, once a day only, if the naris does not stop up, or twice if it does. The spray is continued. Patients are never allowed to use any powder containing cocain for more than three or four weeks continuously, and then only in small quantity, and they are not given prescriptions for it, which might be refilled and thus engender the cocain habit.

I believe that the best results are obtained by making a linear cauterization the whole length of the inferior turbinated body, usually at the juncture of its middle with its upper or lower third. Commonly two cauterizations, occasionally three, and rarely more, are needed upon each side. In persons in whom the inflammatory reaction is severe after cauterization, a linear cauterization of only half this length should be recommended. Those who can not tolerate the full cauterization constitute about 5 per cent. of all those needing the operation.

Before cauterizing, the parts are thoroughly anesthetized with a 4 per cent. solution of cocain, applied by means of a small pledget of cotton wrapped upon a flat applicator; this pledget is moistened in the solution and carried quickly to the back of the nasal cavity. In bringing it forward it is rubbed over all the surface to be anesthetized, the application requiring about thirty seconds. At intervals of about a minute these applications are repeated, and usually two or three are sufficient to produce complete anesthesia. A knife-like electrode, having at its end a No. 21 platinum-wire blade about three-fourths of an inch in length, is then introduced to the back part of the nasal cavity and turned against the tissue to be cauterized. The current is then turned on and the electrode is drawn slowly forward to the anterior end of the turbinated body, burning through the soft tissues so as to just graze the bone in two or three places. Sometimes when the tissues are thick, the electrode has to be moved slightly back and forth two or three times before the bone is felt. It is my desire in all these cases to touch the bone lightly in the posterior, middle and anterior parts, in order that the soft tissues may be firmly bound down when cicatrization

takes place. More extensive cauterization than this at one time is seldom justifiable, because it causes such intense inflammation. I am not at all in favor of the frequent cauterizations, daily or every three or four days, which some physicians practice in treating hypertrophic rhinitis; neither can I see any necessity for causing the patient to return to the office every day or two during the treatment. When patients come to see me from a distance of two to four hours' ride, I usually make one cauterization and then direct them to follow out the after treatment carefully at home, and return for cauterization upon the other side, any time that suits their convenience after three weeks; but I prefer, when it is practicable, to see the patient once at the end of four or five days after the cauterization, in order that I may be sure that all is going well. In a very few cases, either because of unusual pain or excessive inflammation and swelling, I find it desirable to see the patient within two or three days after the operation.

From a study of these private cases I conclude:

1. It is important that antiseptic applications be regularly employed after cauterization of the nasal mucous membrane; and that the nostril be closed by cotton for several days whenever the patient is out of doors, to prevent taking cold.

2. As a rule, at least two weeks should intervene between operations upon opposite sides, and three or four weeks between those on the same side.

3. No serious results are at all likely to follow cauterizations made in this way.

4. Practically all cases of hypertrophic or intumescent rhinitis may be cured by this treatment, though occasionally portions of the turbinated bones must be removed.

SHOULD ERGOT BE USED DURING PARTURITION AND THE SUBSEQUENT INVOLUTION PERIOD?

Read before the Twenty-fourth Annual Convention of the Colorado State Medical Society, Denver, June 19, 1894.

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Fifteen or twenty years ago, it would have been regarded as almost sacrilegious to doubt the propriety of using ergot during parturition.

So much had it come to be relied upon to stimulate deficient uterine action during labor, and to prevent post-partum hemorrhage, and so extensively was it used by the medical profession, that any one having the temerity to doubt its utility in such cases would have been summarily suppressed or accorded that pitying toleration that so often falls to the lot of the innovator. Such a state of mind as this could have but one result, viz., the blind, routine and indiscriminating use of the drug by many physicians.

This practice was followed by so many accidents and unheralded tragedies, however, that it finally began to dawn on the minds of at least a portion of the profession that everything was not just as it should be. This led to a more careful investigation of the action of the drug and the dangers attending its use and pointed out some of the restrictions which should be placed upon it.

This question is now being actively discussed and great names with all their prestige and authority can be found arrayed on both sides. Time will not permit us, however, to go into details or to make extensive quotations on this occasion.

In arriving at a conclusion concerning such a question as this we should be guided by certain well defined principles. In the first place, instead of entering the investigation with a cherished theory to uphold or confirm and making the facts conform to this theory, we should earnestly strive to arrive at the truth, regardless of the effect it may have.

The advantages and disadvantages arising from the use of a particular medicine should be carefully weighed, and if it be found that the latter overbalance the former its use should be strictly limited and the practitioner should earnestly strive to find some other means to accomplish the desired results without the attendant dangers. Approaching the investigation of the utility of ergot during parturition in this spirit, let us first briefly note its physiologic action, then consider its dangers and lastly ask ourselves whether any other agent or agents can take its place. In considering its physiologic action we shall not refer to the acute poisoning caused by toxic doses, but merely indicate the effect of small and moderate or full doses. According to Wood and other standard authorities ergot acts as a stimulant to the peripheral cardiac nerves; the frequency of the pulse is diminished, the arterial tension raised and the caliber of the terminal arteries and capillaries greatly reduced. While this constringing effect upon the blood vessels has a far reaching influence, still the most decided and important effect of ergot is its action upon the muscular tissues of the uterus. All the phenomena of nature manifest themselves in rhythmic or undulatory movements.

Given in very small doses the natural rhythmic uterine contractions are merely intensified, but if the dose be large enough to have a decided effect the *character* of the pains is entirely changed; they become much more severe and prolonged than normal and the natural period of relaxation may be completely abolished. The uterus is held in the relentless grasp of a tetanic contraction and the intermittent expulsive efforts are changed into one continuous strain. Here, as everywhere else in nature, great power if not carefully directed and controlled is attended by great danger. Could we but lift the veil that conceals the many young graves, shattered invalid lives and the mistakes of judgment that so thickly strew the victorious pathway of this potent agent, we would hesitate before conjuring up a power we may not be able to control.

The dangers of ergot are of a two-fold nature; that is, they affect the safety of both the mother and the child. The long continued and uninterrupted tetanic contractions may produce rupture of the uterus and speedy death of the patient. This result while of comparatively infrequent occurrence is so calamitous to all parties concerned when it does occur that it ever hangs like the sword of Damocles over the head of the physician who uses ergot freely. The danger of laceration of the cervix, perineum and other portions of the parturient tract is greatly increased by the use of ergot. I am firmly convinced that to its free, I might say reckless use, are we indebted for much of that wealth of material that crowds the gynecologic clinics and private hospitals of our large cities and is such a veritable bonanza to

specialists in that particular line of work. Hour-glass contraction of the uterus may be produced by this agent. In the early years of my practice I saw three cases of this complication, and am firmly convinced that at least two of them were due to the use of ergot.

One of the chief arguments advanced in favor of ergot is its power to produce strong contractions and thereby prevent post-partum hemorrhage. No one will dispute the fact that ergot produces energetic contractions, but that it is the only or even the best means to employ for that purpose is a very different question. Administered per os it requires from fifteen to twenty minutes to secure the desired effect, hence to obtain results it must be given, as was taught fifteen years ago, just before the head is born. This method has the disadvantage of interfering with the proper management of the third stage and may cause hour-glass contraction. If the administration is delayed until after the delivery of the placenta, dangerous or fatal hemorrhage may supervene before the medicine has time to act, even when given hypodermatically. The *habit* of placing such great reliance on ergot has, I believe, been responsible for the loss of many lives, simply because it has so engrossed the attention of physicians that they have failed to give that time and thought to the investigation of other means of relief that the importance of the subject demands.

I believe that all will bear me out in the statement that there is no emergency in the whole range of medical practice which more imperatively demands clearly defined methods of treatment and prompt action on the part of the physician than post-partum hemorrhage. Also that such an organization of the knowledge pertaining to the subject as will enable him to apply it in the most effective manner can only be obtained by a thoughtful, painstaking investigation of all the available means by which the difficulty can be overcome. Right here is where ergot has done a great deal of harm to the physician. Educated to regard it as a sheet anchor, many neglect to prepare themselves for those emergencies in which it fails, and are compelled to stand helplessly by or rush aimlessly about while the life blood flows rapidly away before their eyes; to see the dark clouds of sorrow settle over a happy home and feel that intense humiliation that must attend such a failure. Nor is it clear to my mind that an agent capable of producing the peculiar effects that ergot does, can have a permanently beneficial effect in promoting uterine action. As you all very well know, action and reaction are equal but opposite in direction and this applies to physiologic as well as to physical activities. Following out this line of reasoning one would naturally expect the intense uterine muscular activity induced by the action of ergot to be followed by a corresponding period of fatigue and relaxation. There is one possible deleterious effect that I have thought might follow the use of ergot. I have never seen an allusion to it in any work or journal and present it for your consideration and criticism.

It is a clearly demonstrated fact that intense muscular activity or effort is followed by the formation of organic poisons, ptomaines or whatever they may be called. This poisoning is, other things being equal, proportional to the intensity of the effort and the amount of muscular tissue involved. In confirmation of this opinion I desire to call your attention to the following authorities: Fernand Lagrange, M.D., in his work, "Physiology of Bodily Exercise," page 348, says: "In the opinion of all physicians in these days the fevers of overwork which are observed alike in animals and in men are due to a kind of poisoning of the body by its own elements, to an auto-intoxication of the system by the products of dissimilation which have accumulated in too great abundance in consequence of excessive work."

Prof. I. N. Love, in a paper read before the St. Louis Medical Society, Jan. 20, 1894, quotes from an address of Michael Foster, the great physiologist, delivered before the University of Cambridge, in which he says: "When we have excessive muscular exertion, the weariness may take a form of distress, and if the effort be continued the distress may become so great as to occasion such complete exhaustion that even death may result." "In excessive work of whatever kind it may be, in order for the work to be accomplished there is a greater demand upon the blood for oxygen." "There are many things besides carbonic acid which are swept into the blood as the result of the activities of the body; in other words the product of work in the human body is a poison which must needs be eliminated through the medium of the lungs and the other excretory organs." "As physical and mental efforts are continued the eliminating capacity unless carefully guarded is marred, the resulting poisons are more and more heaped up in the system, poison the muscles, poison the brain, poison the heart, poison at last the blood itself, starting in the intricate machinery of the body new poisons in addition to themselves." "The hunted hare run to earth dies not because he is choked for want of breath, not because his heart stands still, its store of energy having given out, but because the poisoned blood poisons his brain, poisons his whole body."

These quotations very conclusively show that for its healthy activity the human organism must have an abundant supply of pure air to oxidize the products of retrograde metamorphosis; that the eliminative organs must be in an active state and the various functions of the body be performed in a normal manner. I can conceive of no condition more favorable for the rapid formation of retrograde products than that presented by the uterus at the end of parturition. Here we have an organ enormously enlarged, all the functions of which are in a state of great activity and which under proper conditions should reach its normal size in two or three months. This involution according to recent authority (see JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, April 14, 1894, page 552) is caused by the conversion of the albuminoid elements of the muscular tissue into soluble peptones which are eliminated through the kidneys and other excretory organs.

In order that this process of retrograde metamorphosis may be carried on most effectively it looks reasonable to my mind at least that the natural rhythmic uterine functions should be maintained as nearly in a normal condition as possible; that the circulation of the blood with an abundance of oxygen to reduce the waste materials be free and unimpeded and that the excretory channels be in the best possible condition to dispose of the waste products. Right here is, I believe, a serious objection to the use of ergot, as there is no doubt but that it contracts the arteries and interferes with the circulation, and

it would appear to follow as a corollary of this proposition that it locks up the accumulating waste materials in the uterus and when relaxation occurs, allows them to be carried into the system in large quantities. It also seems reasonable to infer that such an action as this is capable of producing a change in the *character* of the products of muscular decomposition and from lack of oxygen permitting the formation of more virulent materials (ptomaines or whatever they may be) and thus producing acute attacks of fever and systemic disturbances for which we have hitherto not been able to assign a cause. Every obstetrician has doubtless seen cases in which, after the most painstaking care and scrupulous cleanliness attacks of fever have developed for which no reason could be assigned.

Is it not possible that these are cases of true auto-infection produced by organic poisons formed in the rapidly involuting uterus? Is it not also probable that the so-called *milk fever* is largely due to a similar cause?

While the use of ergot has many dangers for the mothers it is doubly fatal to the child. As you all very well know, during a violent contraction the passage of the blood from the placenta to the child is interfered with, or in other words its respiration for the time being is stopped. If this state of affairs lasts for any length of time the child is profoundly asphyxiated and in many cases passes beyond the range of the most consummate skill, and we have another added to the long list of cases of misdirected force and an existence cut short.

But it may be asked, when if at all, should ergot be used or what agents can take its place? Before the birth of the child I do not believe it should be used at all. Uterine inertia should be overcome by quinin, viburnum pronifolium, small doses of hydrastis, gentle kneading and friction over the uterus, with the correction of faulty positions and the support of lax abdominal walls by means of a tight binder over the uterus and finally resort to the forceps when other means have failed. If the third stage of labor be properly managed, the physician giving careful personal attention to the mother from the time the child is born until the complete expulsion of the placenta which should be removed by the Credé or some modification of the Credé method, I have reason to believe that very few cases of so-called retained placenta, or post-partum will be encountered. Active hemorrhage during the third stage demands prompt action and immediate removal of the placenta, and to attain this end ergot can render no assistance and may greatly delay and impede its removal.

After the delivery of the placenta I believe some agent or agents that secure and maintain a mild, tonic contraction of the uterus are serviceable and for the last six or eight years have been in the habit of administering the following combination, viz:

℞ F. E. Ergotæ . . . . . Grams.
F. E. Hydrastis canadensis ää 15.00
F. E. Hamamelis virginicae qs. ad . . . 60.00
M. Sig: Teaspoonful three times a day.

But it may be asked why retain the ergot? I am free to confess that this is more of a sop to Cerberus, a deference to long established practice coupled with the instinct of self preservation, than to a well grounded belief in its necessity. The hydrastis stimulates normal uterine action but does not produce continuous contractions like ergot and I have been much pleased with its action; the hamamelis acts as a synergist and moreover has marked tonic effect on the muscular tissue of the veins. I have thought that the latter remedy given both before and after labor would have a beneficial effect in maintaining the tone of the venous system, preventing engorgement of the veins and thereby guarding against the various phlegmasiæ and last, but not least, help to prevent the formation of hemorrhoids.

For post-partum hemorrhage, I regard prevention of far greater importance than any remedy. Treat every case as though you expected it to terminate in serious hemorrhage and you will very rarely be called upon to face this terrible emergency. In those cases where no precaution can prevent the accident what shall we do? The first and to my mind most important requisite is, *keep cool*, do not get excited but have your thoughts collected and all your resources fully under command. Grasp the uterus externally firmly in one hand and introduce the other previously rendered aseptic into its cavity; turn out the clots and make pressure with the closed fist on the internal walls. The injection of hot water, from 115 degrees F. to 120 degrees F., vinegar, or packing the uterine cavity with iodoform gauze are frequently employed and highly lauded expedients.

There is one other agent, however, which I think should receive more attention than has been accorded to it in the past. I refer to the interrupted electrical current. Here we have an agent that can be applied more promptly than almost anything else, that is absolutely under control, that induces prompt and effective contractions and can be instantly discontinued when the desired effect has been obtained.

THE RELATION OF CHRONIC NASAL AND LARYNGEAL DISEASES TO PULMONARY TUBERCULOSIS.

Read before the Colorado State Medical Society, Denver, June, 1894.

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For the purpose of inquiry into the relation of chronic nasal affections to those of the throat and chest occurring in connection with pulmonary tuberculosis, I have analyzed my last 219 reports of chest examinations. Taking up each report in its exact order, 19 of these, while pulmonary, were apparently non-tuberculous and therefore omitted, leaving 200 to be analyzed. The inquiry was stopped at this number because it seemed sufficient to draw conclusions from and show the tendency of the relationship, and on account of more extended observations requiring more time and labor than could be then spent upon the subject.

There were, therefore, 200 cases of pulmonary tuberculosis to be investigated which were not in any way selected, but taken in the order in which they presented themselves to me for their first examination, running back from a recent date. Of these 200 chest cases, 33 had also nasal disease, 38 also laryngeal, and 23 had both in addition to their lung affection, making 56 with nasal and 61 with laryngeal complications. Only clearly marked cases being noted.

The nasal cases were divided: 1, into those in which the disease was most evident or was known to have commenced, or existed solely or mostly on one

side more than the other, and these again into right or left; and 2, into those in whom the amount of disease or obstruction appeared about equal, and in whom there was no clear evidence of its having begun on one side more than the other, these being grouped for convenience under the head of median.

To enlarge a little on this classification, septal deformities either divergencies or exostoses in the form of shelves or spurs or compensatory buttresses or sigmoid curves, were evidently the most common causes of the stenosis and consequent rhinitis, and therefore the side upon which the stenosis existed, or was most complete, was taken as the one under which the case should be classified even though, as is often the case, the disease of the membrane or turbinated bones was more marked on the other side. Good reasons for this condition are given by Bosworth in his recent and most valuable work upon the nose, in the chapter upon hypertrophic rhinitis, which is well worth reading in connection with this general subject, but which can not be quoted from satisfactorily except at too great a length for the limits of this paper.

The classification was made from the side upon which the chief cause of the disease appeared to be, rather than where its worst symptoms might happen to be exhibited later in its course.

The septal abnormalities referred to were found to be the most frequent initial cause, although there were some cases in which the primary cause appeared to be hypertrophy of the turbinated bodies, or adenoid, or polypoid growths, or an ulceration simple or tuberculous.

Under the head of median there are undoubtedly some in whom the disease had had a starting point on one side but in which the advance of the disease had masked the origin, so that some of these if they could have been traced up should have been classified as right or left.

For the purpose of the inquiry as to the relation of the nasal disease to the pulmonary, the cases were again classified under right, left, and median, with regard to their pulmonary disease. The side of the chest in which the symptoms first appeared, or in which it was most manifest deciding the heading, while those in which the disease was about equal on both sides, or the side of origin was unknown, or had apparently begun on both sides at once, are classified under the head of median.

Defined in this way, it was found that of the nasal cases, in twenty-four the disease appeared to have originated upon the right side and fourteen upon the left. Of the twenty-four cases of right nasal disease the right lung was primarily or chiefly affected in seventeen; the left in one; both equally in 6. Of the fourteen cases of left nasal disease, eight were primarily affected in the left lung, four in the right and two equally in both. So that in the thirty-eight nasal cases where the disease could be classified right or left, 65.8 per cent. had their lung disease primarily or chiefly upon the same side as the nasal disease. It is interesting to note that the case of right nasal disease in which the lung disease was on the opposite side, was one where stenosis of the right nostril had been caused by a fracture of the septum, and of the four cases of left nasal disease where the pulmonary disease was on the right side one also was known to have been a traumatic stenosis.

The causes of this curious symmetry between the nasal and thoracic affection, are matters of interesting speculation. Interference with nasal respiration undoubtedly influences thoracic disease as will be later discussed, yet it is impossible to believe that the obstruction to the passage of air through one nostril could directly affect the air current entering the lungs through one bronchus more than the other, nor could possible extension of disease along the continuous membrane account for it. Bosworth states his belief that chronic inflammations of mucous membranes are usually local and not general. "Diseases of the Nose," p. 123, W. Wood & Co., N.Y.

With respect to what has been pointed out as the chief cause of nasal obstruction and so of nasal disease, viz: Septal divergencies or hypertrophies, it is assumed by most rhinologists that their chief cause is injury, many of the injuries arising before birth or in childhood and passed over unnoticed. Bosworth ably upholds this view and cites the examinations of Duret, who found the septal growths were composed essentially of plastic infiltration, thus showing their inflammatory origin (p. 290).

While we all know how very much exposed to injury the nose is, we also know how surprisingly it recovers apparently unharmed from many a blow. In the island from whence I came, the successful causing of a bloody nose to one or more of one's fellow students was a necessary portion of the curriculum to be gone through by all who sought distinction in an English school, and many a deed of prowess has been wrought upon my own proboscis and yet I have escaped a diverted or hypertrophied septum. In youth at which time most nasal injuries are received, the elastic resiliency of the parts doubtless prevents permanent deformity, though when the blow is not too violent or one sided and yet there is permanent injury resulting, it may be that the naturally weaker side yields and puts forth callus to afterwards cause an obstruction. In this connection it is interesting to note that the two cases of injury referred to where the obstruction was asymmetrical, were doubtless so because the injury resulted in a fracture by a blow from the same side as the afterwards affected lung. These two cases in not following the apparent rule may be held to give additional evidence of its existence.

The facts would appear to suggest an underlying cause in a common deficiency of resistance to disease or injury on the same side of the body, which was probably caused by a pre-natal or post-natal imperfection of development or growth, either congenital or acquired by circumstance or habit; this developmental deficiency being one of nutrition or innervation, or both.

That there is generally a difference if not an inequality in the portions at least of the two sides of the body is a matter of common observation, as when the beauty at the photographer's has a best side to present to the camera. The difference in the length of the limbs, the irregularities of sight and hearing, and of cerebral action, if such theories as Oliver Holmes, of the squinting brain be correct, are instances of this, while the records of the autopsy table confirming them, make defective development the most plausible explanation of this symmetrical exhibition of disease.

To pass to a consideration of the laryngeal cases and their significance, we find of the 200 cases of pulmonary tuberculosis 30 per cent. had throat disease,

which percentage was made up to 20.5 per cent., tubercular, 9 per cent. simple chronic laryngitis and two cases of syphilitic ulceration.

We do not find in the laryngeal disease any pronounced evidence of one side being attacked earlier or more violently than the other, both being generally or so nearly equally involved as to make any distinction, as in the nasal disease, impossible. This is confirmed by clinical experience, which teaches that the first signs of laryngeal tuberculosis are most commonly found in the commissure and when the arytenoids are involved they are usually simultaneously swollen.

Only six cases in all are noted in which the disease was markedly more severe, or began on one side in preference to the other. Of these, one had the left side of the throat, nose and lung most affected, and one the right side. One the left side of the throat and the right side of the nose and chest. Two the right side of the throat and chest, the nose clear and one the left side of the throat and the right chest. These were all cases of tubercular laryngitis. In the two syphilitic cases, as in the chronic laryngitis cases, the disease was equally distributed on both sides.

The fact that the same side of the throat as that of the nose or chest is not especially involved, would tend to show that the idea of the disease spreading directly from one nostril to the lung of the same side can not be maintained, or that the symmetrical distribution of the nasal and pulmonary disease can be explained by any deflection or obstruction of air currents through one nostril. Thus the theory of developmental deficiency receives additional support by exclusion of these possible explanations.

So far then the facts indicated by this analysis of 200 cases of pulmonary tuberculosis are that 28 per cent. had nasal disease, 30 per cent. laryngeal and 11.5 per cent. both; 20.5 per cent. had tubercular laryngitis, while of the nasal cases it is hard to determine how many were tuberculous; only a very few were noted as positively tuberculous and probably not many more were so, confirming the opinion of most rhinologists that nasal tuberculosis is comparatively rare.

The practical relation of nasal to both laryngeal and pulmonary disease is doubtless chiefly in causing mouth breathing and so catching cold, in diminishing pulmonary expansion and complete aeration; in reflex irritations, and in direct annoyance and consequent mental worry and depression in extreme cases. The moral is to relieve the stenosis by operation when needed, and the rhinitis by cleansing, stimulation or astringency, as radically as the patient's health permits, and the case requires also to examine the nasal and naso-pharyngeal passages, especially whenever the voice is affected or the throat complained of, as the cause of laryngeal symptoms often lies in the nose or naso-pharynx. At the same time it must not be forgotten that rhinitis is frequently kept up, or when there is also a permanent stenosis, aggravated by the patient's general condition, especially with respect to digestive disorders, gout, rheumatism and syphilis.

The practical lesson of the connection between chronic laryngitis and pulmonary tuberculosis is to cure the former as soon as possible, especially in order to ward off danger of secondary tuberculosis by the sputum infecting the diseased mucous membrane as it passes over or lodges on it. The tone and strength of the voice should always be observed, and it is doubtless best that in all cases irrespective of these warnings a laryngoscopic examination be made, as experience tells one that many cases are overlooked in an early stage when treatment would be most valuable.

In considering the pathologic connection between laryngeal and pulmonary tuberculosis, the explanation is still in doubt among most laryngologists. Many excellent authorities believe that laryngeal tuberculosis is rarely if ever primary, and I myself have never seen a case without accompanying pulmonary signs, though I quite believe in its possibility while some deny it. Further, Heryng and others believe that the laryngeal affection always or commonly results from infection by the bacillary sputum from the diseased lung, through the surface of the laryngeal membrane, while others think, and with them I agree, that while this may occasionally occur it is rare, and that the bacilli attack the membrane from beneath being conveyed often perhaps through the course of the bronchial glands. My reasons for believing this are first, that in Colorado we see very few cases of tubercular laryngitis arising after arrival, yet as the last stage of consumption is especially prolonged in this climate, during which time there is usually a copious and constant stream of bacilli laden sputum being passed through the larynx for a much longer period than usually occurs at sea level, we should naturally expect many cases. Further the ulceration usually follows upon the raising up of the membrane by a tuberculous mass from beneath which is extruded through the ulcer, and then if the patient is fortunate and well treated it will heal. The ulcers rarely presenting the appearance of spreading on the surface like lupus but rather appearing like the necrosed tissue over a boil, through which the contents of the boil afterwards escape.

While recognizing the added danger and so increased mortality from the combination of laryngeal with pulmonary tuberculosis, I am glad to have added my clinical experience[1] to the evidence which shows that laryngeal tuberculosis while always grave is not necessarily fatal, but that it demands and well repays by mitigation always, and occasionally by cure, thorough competent local treatment. My statistics further proving that high climates, when equally good local care is used, are especially suited for the treatment of laryngeal tuberculosis, instead of being contra-indicated as was formerly believed, which is shown by the frequent healing of the throat lesions, even when death ensues from the pulmonary or other tuberculosis.

EMASCULATION AND OVARIOTOMY AS A PENALTY FOR CRIME AND THE REFORMATION OF CRIMINALS.

Read before the Illinois State Medical Society, May 15, 1894.

BY ROBERT BOAL, M.D.
LACON, ILL.

Political and social economists and humanitarians within the past third of a century have spent much time, thought and effort upon the best and most effective means of punishing crime and reforming the vicious and criminal classes of society. The

[1] Therapeutic Gazette, Nov. 15, 1893.

tendency of the present age is to abandon in a great measure the cruel, retaliatory and vindictive punishments for criminal offenses. As we have advanced in morals and a higher civilization the disposition to punish criminals by demanding a penalty in kind, an eye for an eye and a tooth for a tooth, has undergone a marked change, not that crime is more tolerated, or criminals more readily forgiven, but because we have more enlightened and intelligent views of the causes of crime and the antecedents, surroundings and conditions which affect the lives and form the characters of the guilty. We have now a clearer perception of the responsibility of the criminal, vicious and defective classes in their relations to society and in consequence have abandoned our old ideas of retaliatory and compensatory penalties for crime. In thinking upon this subject and upon the efforts that have been made and are now making to solve the great social problem of adequately and effectively punishing crime, of reforming criminals, of bettering the condition and lessening the number of these classes and consequently lessening the burdens they impose upon society, I entertain some opinions which I will present to the Society as briefly and clearly as I can. As a penalty for crime and the reformation of certain classes of criminals, I believe unsexing them to be the most effectual in accomplishing these ends. In my opinion all criminals who indicate constitutional depravity transmissible by heredity should be subjected to surgical unsexing enforced by law. I believe it would cause a diminution of crime and lead to the reformation of criminals. But this penalty should not be inflicted solely upon the male, but should also be extended to the female criminals—for the one emasculation, for the other ovariotomy. The object of all punishment is threefold: 1, to satisfy the demands of justice; 2, to deter and intimidate the criminally disposed; and 3, to effect the reformation of the offenders against the law. Now the punishment for offenses and crimes should be of such a kind and degree as will best subserve these purposes and most effectually protect society from injury and apprehension, diminish crime, and reform the criminal. This is the question over which sociologists and humanitarians have pondered long and earnestly and have not as yet arrived at a satisfactory solution. Prison reformers have accomplished much in improving the sanitary condition of our jails, reformatories and penitentiaries and in causing the adoption of a more humane and considerate treatment of criminals, but have fallen far short of their reformation. In this latter respect their efforts have been crowned with such slight success that it amounts to almost an entire failure. Unless you can change the constitutional depravities transmitted by heredity for perhaps two or three generations, little can be done to reform criminals, diminish their number or protect society from injury. It is my deliberate opinion that if a law was enacted and placed upon our statutes, inflicting this penalty not only upon those convicted of sexual crimes, but extending it to other criminal classes, the paranoiac, burglars, incendiaries, and to other crimes against persons and property, it would answer all the demands of justice and civilized society and vindicate the wisdom of its adoption. In support of these views I beg leave to offer the following considerations:

1. We are taught by both physiology and psychology that all human beings are controlled in their conduct, and their actions and appetencies are expressed through their organic structures, or as they are often called, organic instincts. Of these two are of paramount importance and exert an influence over every human being. They are the love of life and sexual love. The first is from birth to death always in active operation in preserving the individual from the various accidents and diseases which tend to deprive him of it. It is the strongest and outlasts all other organic instincts. While it is developed later and does not last so long, next to the love of life, is this love of sex. It dominates human conduct and desires. It has been bestowed upon us for a wise and beneficent purpose, but when uncontrolled it is potent for evil.

2. The greater portion of the crimes characteristic of the criminal and vicious classes of society, may be traced directly and indirectly to the influence of this uncontrolled and dominating sexual love. The rapes, homicides, suicides, defalcations and embezzlements may be ascribed either directly to sexual love or to the influence associated with it. So well is this understood that when we hear of the cashier of a bank absconding with its funds, or a trusted clerk robbing his employer and betraying his confidence, almost the first comment heard is, "Oh, there is a woman in the case." With scarce an exception there are few vices in the calendar of crime—licentiousness, prostitution, intemperance, gambling, and others that are nameless, that are not instigated, associated with and maintained by sexual love.

3. The physical or structural characteristics of the criminal and defective classes of society are produced, reproduced and multiplied and perpetuated by intermarriage or sexual commerce of persons of like defects, and we have accordingly the result of the activities of living matter, or what we term heredity.

4. By the imposition of this penalty, we destroy the capabilities of these defective criminal classes to inflict injury upon society, thus depriving them of the power of reproduction. This, in my judgment, is one of the strongest considerations in favor of the proposed penalty. It has not only an immediate, but a far-reaching effect.

5. For the purpose of intimidating others from the commission of crime, while neither cruel nor vindictive, it is more terrifying and repulsive, next to death, than any or all other modes of punishment. The loss of sexual capability as a mark of manhood is so utterly abhorrent to all men, that it would be avoided if possible by all individuals not hopelessly insane.

6. In unsexing all constitutionally depraved convicts, the most important of all results (which has incidentally been alluded to) is reached, to-wit: To limit the productive capabilities of these classes, thus aiding "natural selection" and insuring if extensively applied the "survival of the fittest." Instead of confining them in reformatories and penitentiaries and trying to reform them by "moral instruction," impose this penalty and they would cease to multiply and accumulate by unrestricted production. In improving the breed of the lower animals, the gentlest, the strongest and best developed and symmetrical are selected for the purpose of reproduction, instead of the deformed, ill-proportioned and vicious. It is "passing strange" that more time and money is ex-

pended in producing and rearing a prize bull, a fast trotter or a race horse, than in applying the same law to man, "the paragon of animals." Many of you have doubtless read the account published a few years ago, of a family of criminals, whose history had been traced through three or four generations—with scarce an exception all were criminals. Of the males, some mounted the scaffold, others were inmates of prisons or penitentiaries a good portion of their lives, some were murderers, some burglars, all of them thieves. Of the women, all were prostitutes as well as thieves and active and efficient coadjutors of the men in every species of crime against society. Starting from the original stock in every succeeding generation there was an increased development and exaggeration of vice and crime. This history of one family is the history of all in like circumstances, conditions and surroundings. Had the reproductive capabilities of this family been destroyed in the first generation, society would have been protected from danger, and the cost of the conviction and maintenance of several generations of criminals saved.

A reporter for one of the Chicago dailies (the *Tribune*) recently visited the prison for youthful offenders at Pontiac, and he gives the number in the prison at the time of his visit as 636, of which 60 per cent. are thieves—some burglars. Seventy are from 10 to 13 years of age; six or seven are over 21 having sworn falsely to their ages. The major portion of these youthful criminals will probably develop into confirmed thieves and burglars and what the law of this State terms "habitual criminals." Investigation would doubtless show that the greater portion of them are constitutionally depraved; in other words there is a hereditary tendency to crime. I do not underrate environment as one of the causes of crime. Vicious surroundings doubtless have their influence, but when you add to that a hereditary taint for two or three generations, you find a criminal utterly oblivious to every moral influence exerted for his reformation. For such, deprivation of their sexual capabilities offers an adequate and effective punishment and so changes their nature, that reformation while not always assured, in my opinion is in most cases practicable.

7. This deprivation of productive capabilities effects well marked modifications in the purposes, actions and characteristics of individuals. They become more gentle, their heretofore ungovernable passions are in a great degree subdued—they are less wayward and obstinate and more effeminate. In short, they are changed and altered beings in more senses than one. This is a matter of every-day observation in animals who have been emasculated or whose ovaries have been removed. In Turkey and other Mohammedan countries, the eunuchs who guard the harems of the rich are said to be inoffensive, gentle and timorous showing conclusively that the altered being has changed in his purposes,actions, capabilities and necessities.

8. If these statements are true, could any other method than the one proposed be more effectual for the suppression of crime and the reformation of the criminal and various classes of society? It may be asked why not inflict the death penalty upon all convicts whose crimes indicate constitutional depravity, and put them out of the way? This would be a more rapid and certain way of disposing of them, but would not the penalty be more severe and unnecessary than would be required? Would it not be disproportioned to the crime? When you hang a man you destroy him, while emasculation only changes his purpose and desires and leaves his life intact. Again, I do not believe the death penalty would have such deterring and terrifying power as asexualization, for owing to the technicalities of the law and its delays and the uncertain verdicts of juries, the criminal hopes to escape its extreme penalty. In addition to this, there is a great diversity of opinion in the community upon the propriety of inflicting capital punishment. One portion of it believes it should not be inflicted under any circumstances, while another is in favor of imposing it, only for great and unusually atrocious crimes. It is only when crimes of such magnitude as the murder of Dr. Cronin or the assassination of Mayor Harrison, or of a President of the United States, are committed, that the community is aroused and a demand is made for the execution of the criminals. These are extreme cases, but even in them public sentiment is divided as to the necessity of killing the criminal—so great is this aversion to capital punishment that in some of the States it is abolished and in others greatly restricted. If after conviction, each man or woman, after being deprived of their reproductive organs and subjected to a longer or shorter term of imprisonment was returned to society, it is my belief they would become comparatively harmless. Confinement at hard labor in prisons and reformatories, in nine cases out of ten, fails to reform the criminal. Moral instruction is thrown away upon him—he graduates in crime, and he leaves their walls more depraved, and with a stronger determination to war upon society than when he entered them.

9. This proposed penalty for crime might be made applicable to a large class of offenders; instead of limiting it to such as violate the laws governing the intercourse of the sexes, certain crimes against persons and property might be more effectually punished in this than in any other way. There is a class of offenders against the law, and it seems to be rapidly increasing, called by the people "cranks," by the medical profession monomaniacs or paranoiacs, who escape the penalties of the law upon the plea of insanity and consequent irresponsibility for their acts. It would be cruel and inhuman to hang them, but a deprivation of their reproductive organs might have the two-fold effect of answering the demands of justice, and so changing these desires and purposes as to render them harmless in the future.

In Chicago at the present time an investigation is ordered for the purpose of determining the sanity of the assassin of Mayor Harrison, upon the allegation that his insanity occurred after his conviction and sentence. No one can tell what the verdict of the jury will be upon the question. Suppose they find him sane and he is again sentenced for execution, what is to hinder him before the scaffold is again erected to make another application to a complaisant judge for another trial and stay of execution, on the ground that he has developed insanity since the second sentence was pronounced,and thus indefinitely prolong his life, and in the end escape punishment for his crime. Now, if in this case and that of Guiteau, the assassin of President Garfield, the penalty of emasculation had been imposed, and they had been placed under such legal restraint for a longer or shorter time as might have been necessary to secure

its efficiency, it is my belief that in these instances justice would have been satisfied, society protected from further assaults and the criminals partially, if not wholly, reformed.

In the instances just cited and in all others of like character, experts differ and public opinion is divided as to the responsibility for the criminal acts, and it appears to me that neither justice nor the protection of society requires the infliction of the death penalty.

This subject which I have endeavored to present for your consideration has not to my knowledge been much discussed in medical journals or medical societies, certainly not to the extent its importance demands. Considered in its relation to the well-being of society, the literature upon this subject is meager. With the exception of a paper read by Dr. Orpheus Everts before the Cincinnati Academy of Medicine in 1888, I have been unable to find any mention of it anywhere. Dr. Everts is the accomplished superintendent of the Cincinnati Sanitarium at College Hill, who has given this question a good deal of attention, especially in relation to one of the defective classes of society, the insane. I am indebted to his paper for many of the statements and suggestions I present to you to-day. The late Dr. Agnew of Philadelphia, is credited with the proposal to punish all criminals, who were convicted of rape, by emasculation. He limited this penalty to one crime and to the male. Dr. Everts takes broader ground and would apply it to all sexual and some other classes of crime and to both sexes. In this I fully concur, for I believe the unsexing of both males and females convicted of crime is necessary for their punishment, and reformation by the limitation of their reproductive capabilities. The question may be asked, Why bring this topic before a medical society, and what relation has it to the profession of medicine? I answer that it is the branch of State medicine which deals with crime in its relation to, and its effects upon, the health and well-being of society. The medical profession is in a certain sense regarded as the guardians of the public health. It is their duty to recommend the adoption of proper sanitary measures, to prevent or ward off epidemics if practicable, or if not, to restrict their spread and lessen their violence, and to circumscribe by isolation the area of infectious and contagious diseases. If so, are they not equally bound to ward off and confine within its narrowest limits the infection and contagion of crime, for it is both infectious and contagious and the diseases which it engenders are among the most loathsome and intractable of all which we are called upon to treat. As members of a profession which is one of the highest and noblest of human pursuits we are interested in all that contributes to the welfare of the community. This measure should be investigated and discussed with a view to influencing the public mind in favor of its adoption. When that is accomplished proper legislation will follow. Our criminal jurisprudence needs reform. "There is an increasing want of confidence in the efficiency of the laws and the courts which administer them. Every lynching, every riot, every mob is a protest against the delays and uncertainties in the administration of the laws, and if there is not some reform, there is danger that in the unrest of the public mind human society may be overwhelmed by social and political revolutions brought about by the many existing abuses." Is not the medical profession interested in this reform, and will they not aid in accomplishing it?

In conclusion, let me summarize the points I have endeavored to make:

1. That the surgical unsexing of all criminals convicted of offenses that indicate constitutional depravities that are transmissible by heredity is both expedient and practicable.

2. This penalty should be applicable to both sexes.

3. That most of the offenses against society by vicious and defective classes originate in sexual disturbance whether in deprivation or excess.

4. It limits the reproduction and transmission by heredity of the defective and criminal classes of society.

5. It inflicts a penalty that is terrifying and abhorrent without destroying life.

6. It is applicable to other offenses against person or property, originating from other than sexual causes.

7. While effective, the punishment is neither cruel nor vindictive.

8. It is more effectual in changing and improving the nature of the criminal than moral instruction, confinement in prison, or houses of correction.

As to when or how the penalty recommended will be carried out must be left to the future law makers. If adopted I doubt not all the details will be arranged and perfected so as to accomplish the desired end. The present century will soon close upon us, and if the same rate of progress is kept up (as I believe it will be) during the coming one, I hope a change will be made in our criminal code in line with these suggestions. The public mind is not yet prepared to accept the change recommended and it would not now be sustained, but if the question is discussed and agitated by sociologists and the medical profession, I believe that at no distant day that change will surely come.

NOTE:—Since this paper was read, the JOURNAL of THE AMERICAN MEDICAL ASSOCIATION of May 19, 1894, published an abstract of a paper read by Dr. S. F. Sim, of Memphis, before the Tennessee State Medical Society upon this subject, in which he substantially agrees with the opinions expressed by the writer. Aside from the coincidence that two papers upon the same subject were read before two State medical societies at different and distant points, it shows that this question is beginning to receive from the medical profession the attention which its importance demands.

War on the Nostrum Venders.—Dr. J. W. Scott, Secretary of the State Board of Health of Illinois, has begun a vigorous warfare on the itinerant nostrum venders who annually fleece the people of this State out of a sum estimated at over $300,000, by means of brass bands, concert troupes, alleged Indians and other mountebank attractions. Prosecutions have already been begun by several of the State's Attorneys, to whom the Board remits all fines collected as an inducement to vigilance. The law provides that every itinerant vender of medicines shall pay into the treasury of the State Board of Health a license fee of $100 a month. The penalty for a violation of this act is a fine of from $100 to $200, and as the Board refuses to issue such license every intinerant vender is a violator of the law. The Board also has a regulation providing for the submission for chemic analysis of samples of all medicines sold by itinerant venders. This, too, will be rigidly enforced.

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SATURDAY, SEPTEMBER 15, 1894.

THE AMERICAN MEDICAL ASSOCIATION.

Some enterprising persons are unduly exciting themselves about the membership of the ASSOCIATION. Why, asks a certain irregular, should this be called an "American" ASSOCIATION? Solely, our erring brother, because this ASSOCIATION is based upon a representation from the State Societies and the three Public Medical Services. Every regular State Society, except those of New York[1] and Massachusetts, send delegates to the annual meetings; these delegates shape the policy of the ASSOCIATION, and it therefore follows that the total membership of the constituent bodies of the ASSOCIATION, is the actual strength of the ASSOCIATION—with the addition of such local societies as send delegates. On this basis, the adherents of the American Medical are not far from forty thousand.

That they are not all members by the fact of their belonging to the State constituent body is solely due to the failure of one of the proposed amendments. That will come in time as surely as the sun rises in the east. The regular medical profession will not hesitate very much longer, about throwing the weight of their influence in favor of closer union and greater strength. The interests of the profession are too vast and too important to be wasted in divisions and factional differences.

The immense advantages to medical science to be gained by solid adhesion to the representative ASSOCIATION, are too great to justify any other course. While the policy of the ASSOCIATION is thus shaped by delegates duly instructed by their respective State bodies, and by the Medical Department of the Army, the Navy and the Marine-Hospital Service, the scientific features of the meeting are participated in by all members alike, whether serving as delegates or not. These members control the Sections and the Section work, and there is now no limit.

The technical membership was until the last few years confined to delegates, but now is open to all individual members of any medical society entitled to send delegates.

Every sentiment of professional pride, and as well every sound business precept, should urge every member of the regular profession of the United States to add his name and his active personal support to the great AMERICAN MEDICAL ASSOCIATION, under the auspices of which American medicine has so greatly prospered. Let dissension perish and union prevail.

[1] The New York *State Medical Association* sends delegates to the American Medical Association, so that State is nevertheless fairly represented.

DEFORESTATION AND AUTUMN FIRES.

Paradoxical as it may sound, there is some ground for the belief that deforestation by the axe is largely responsible for the annually recurring deforestation by fire.

The yearly precipitation of the lake region, including the great timber areas of Michigan, Wisconsin and Minnesota, has diminished since 1886 to a marked degree. For the Chicago region the yearly mean precipitation since 1871 has been 35.6 inches; but for the past eight years the mean is only 29.32 inches, as against a mean of 37.8 inches for the preceding fifteen years.

An examination of the records of the United States Signal Service for the last twenty-three years discloses a grouping of about seven-year periods of plus and minus precipitation. Thus, during the years 1871-1877, the yearly mean was 35.04 inches—a slight deficiency as compared with the yearly mean of the entire period; in 1878-1884 the mean was 39.43 inches—a marked excess; in 1885-1891 the mean was 32.18 inches—a marked deficiency. From this alternation it has been argued that the precipitation is governed by some law not yet recognized and an increased precipitation was predicted for the period beginning with 1891; but thus far this has not been realized and the increasing denudation of the timber lands is again being considered as a possible cause of the deficient precipitation and the prolonged droughts.

Of the regulative effects of forests on temperature and rainfall there can be no question; and, aside from these disastrous forest fires and their destruction of life and property, the conservancy of our timber lands in the interests of public health is yearly becoming more important. The results of MR. GEORGE VANDERBILT'S undertaking at Asheville, N. C.,—which has been characterized by MR FRED LAW OLMSTED as "the most extensive and important experiment in forest culture ever attempted on the globe"—will be watched with interest by sanitarians and climatologists everywhere.

Meanwhile, the necessity for more thorough gov-

ernmental control of our remaining timber lands has become imperative—a necessity which is atrociously emphasized by the colorable suggestion that the recent fires, with their appalling destruction of life, were the work of "timber pirates" to conceal their depredations.

HERMAN VON HELMHOLTZ.

A dispatch dated September 8, has just announced to the world that one of its illustrious men of science, HERMAN VON HELMHOLTZ, has passed away. He succumbed to a paralytic stroke from which he had suffered for the past six weeks. Advanced as he was in years his unabated mental vigor had still held out the hope that his might yet be years of activity. The shock to the entire scientific world by reason of his death will be all the more keenly felt by his numerous admirers in this country who during his visit one year ago learned personally how little age had dimmed his intellect or marred his genial manner.

Of all men who have left their imprint on the progress of science during this century, the influence of none has extended into as many different lines of knowledge as that of HERMAN HELMHOLTZ. In medicine, particularly, we owe him not merely the numerous additions to our knowledge in physiology and physiologic psychology, but the world is indebted to his genius for that now indispensable instrument—the ophthalmoscope, an invention that will keep his memory alive more permanently than monuments and epitaphs.

His first publication, a thesis on the structure of the nervous system in evertebrates in 1842, gave proof of his ability as an observer. It was the first demonstration of the continuity of nerve fibers with nerve cells. Subsequent to this work he investigated the phenomena of putrefaction and fermentation, but could at that time not decide definitely whether these changes were only of a chemical nature or depended on living microbes. Of greater importance were his studies in animal warmth, in which the application of his thorough knowledge of physics gave to this part of physiology a more precise basis than it had previously possessed. During this time of his life he was army surgeon in the Prussian army, but found or rather made opportunity to have his name spread far beyond the domain of medicine by his essay in 1846 on the conservation of energy. While not the only investigator in this line of thought, for, in fact, he was preceded by several years by ROBERT MAYER, with whose work, however, he was not familiar, HELMHOLTZ was the first to prove irrefutable by mathematical reasoning the correlation and indestructibility of energy in all its different modes of manifestation. To him hence belongs the credit of helping to lay the corner stone upon which the structure of modern theoretical physics rests.

In 1849 HELMHOLTZ was called to the chair of physiology in Koenigsberg, which he exchanged for the same position in Bonn in 1855, leaving that university for Heidelberg in 1858, where he stayed until 1871. The year 1871 ended his career as a teacher of physiology, as he was asked to take the chair of physics in Berlin. He resigned this chair in 1888 and was then appointed Director of the Imperial Physical-Technical Institute at Berlin. His university career was inaugurated by his researches on the velocity of nerve conduction. Accustomed as we are now-a-days to physical methods in physiologic work, we can hardly realize what a revelation HELMHOLTZ's results were to physiologists of those days. One is indeed at a loss which to admire most in those two papers of 1850 and 1852; the surprising revelations concerning the mechanism of nerve-conduction, or the elegance of the methods used in that research.

In 1851 his researches on the path of rays of light in the eye led him to the discovery of the ophthalmoscope. The short precise statement of his work outlined clearly what could be expected of this instrument for clinical purposes, and yet with the full appreciation of what he had accomplished, his essay can forever serve as a model of the modesty of true genius. Continuing his optical researches, HELMHOLTZ next constructed his ophthalmometer, the teachings of which enabled him to compute the course of rays of light in the eye, and led to his discovery of the mechanism of accommodation (simultaneous with but independent of KRAMER). His different optical researches, on the mixture of color sensations, the movements of the eyes and kindred subjects were finally collected in his "Handbook of Physiological Optics," published between 1855 and 1866, of which a second revised edition is now being re-issued, but is not yet completed. This magnificent treatise in which every fact stated has been verified by the author, unrivalled in philosophic conception and a model in the painstaking accuracy of its historical bibliography is the physiologic foundation of modern ophthalmology.

Comparable to his work on physiologic optics are his contributions to the mechanism of hearing, collected in his "Sensations of Tone," published in 1862 and in two later editions. It would be difficult to name any other work betraying such versatility in original investigations as HELMHOLTZ showed in his *Lehre von den Tonempfindungen*. The anatomic study of the ossicles and their joints, the physical and mathematical analysis of the timbre of sounds, the inquiries into the psychology of musical perception, broadly philosophical without being speculative, and the literary researches into the theory and practice of music of foreign races stamp the book as the work of an unique genius.

His physiologic researches, however, sufficient as

they were to keep his memory alive in the annals of medicine, were but a part of HELMHOLTZ's work. The prominence which his first masterly essay on the conservation of energy gave him in the ranks of physicists was maintained throughout his lifetime by numerous other contributions all equally characterized by unusual penetrating power guided by mathematical reasoning. Perhaps his best work was in the domain of theoretical electricity. His researches on the time relations of induction currents, and on the oscillations in electric discharges have been the starting point of many of the wonderful extensions of electric knowledge of the last few years.

But he did not confine his physical work to electricity, and indeed with many chapters in the theory of light, sound and hydrodynamics his name will always be associated. Within a few years of his death he began a mathematical inquiry into the movements of the atmosphere, which meteorologists consider as a great advance.

His rare mathematical ability did not prevent HELMHOLTZ from allowing his imagination to soar toward the solution of some general problems not confined to any one narrow line of investigation. His essays on the conservation of energy, the cosmic theory, the relation of electricity to the atomic theory (the Faraday lecture before the London Royal Society for which the COPLEY medal was given him) are all marvels of a versatility, which yet was always controlled by mathematical reasoning. Nor was his safe though far-reaching reasoning any less apparent in his excursions through the treacherous expanse of psychology. Among the great philosophic achievements of the century rank highly his dissertation on the origin of geometrical axioms as well as his discussions on the mechanism of auditory and visual perceptions and their relations to reasoning and the arts.

Not least among HELMHOLTZ's merits are his popular lectures. It is but seldom, that so much genuine knowledge on abstruse subjects has been given to the general public in such palatable shape. For in all his writings characterized by accuracy, preciseness and terseness, HELMHOLTZ was not indifferent to literary beauty. If most of his physical articles tax the attention of the reader to the utmost, they do so only for the reason that he could so easily present his thoughts in strict mathematical garb, and not from want of clearness in the style. In fact, HELMHOLTZ was endowed with rare artistic taste, shown not only by his leaning in psychology towards problems relating to art, but also by the artistic finish of his writings.

His life was an uneventful one, except in scientific triumphs. His seventieth birthday, three years ago, was the occasion of ovations from the entire scientific world, which showed not only the admiration he commanded, but also the personal affection felt by all his pupils towards him. On that occasion the German Emperor recognized officially his merits, by granting him the rank of nobility. But grief did not spare him in his old age by the loss of his son, ROBERT HELMHOLTZ, a promising young physicist.

In the annals of science and progress the name of HERMAN HELMHOLTZ will rank forever foremost as an illustrious example of what man can do for mankind by the conscientious application of intellectual power.

FACIAL CHANGES MEDICO-LEGALLY CONSIDERED.

Is it possible that the face can become so changed as to be unrecognized in a brief time? was the question addressed to a leading physician in a recent trial. His answer was, yes. In an explanation he described the case of a physician who received a dispatch announcing the death of his wife. In half an hour his expression had changed so markedly that he was not recognized on the street, except by those who were most intimate with him. This suggests a field of inquiry that is at least startling. The changes of countenance from disease and injury are familiar to all physicians, but the possibility of similar changes from shock, profound mental emotion or physical disturbances that have no apparent causes are new to the student.

In a recent paper read before the Medical Legal Society of New York, by DR. OSBORNE, "On People Who Drop out of Sight," three cases are given which bring out this fact. Two of the cases were men of some prominence who walked away from their homes in broad daylight entirely unrecognized. They must have been seen by many persons acquainted with them, all of whom did not remember any familiar expression. The most careful exhaustive inquiries failed to trace their movements, and after a long interval both of these cases recovered consciousness of their surroundings and returned, but with no recollection of how and for what reasons they left and what they had done in the interval. In the third case, a man was injured in an accident from a runaway horse; then disappeared in an equally mysterious way, in a place where he was known and apparently under the full observation of many persons. Three days later he appeared at his home in a dazed condition, and very greatly changed in countenance. In these cases the blanks of memory and periods of unconsciousness, or trance conditions, in which another personality existed, was evidently preceded by some profound change in the facial expression.

This, the author asserts, is the key to the cases which so suddenly and mysteriously drop out of sight in broad daylight, and in surroundings where it

would seem impossible. This trance phenomena and double personality is far more difficult to understand than rapid facial changes that would give the appearance of a different person even to those familiar. Practical physicians become experts in reading the changes of facial expression, and rely to a large extent on their knowledge of diseases from this source. Surgeons see signs in the face of early death or recovery without being able to describe or make it clear to others. Many diseases and emotional disturbances are registered in the most profound changes of the countenance; hence it is not improbable that similar changes may come from central brain states at present unknown.

Any one who is familiar with hypnotic phenomena will be startled at the changes apparent in the person who is hypnotized. In one case the sad, melancholy facial shadows, the bowed head, bent shoulders, wearied walk and listless air; in another the buoyant look, flashing eye, erect head, brisk, nervous movements, may be so different from the accustomed appearance of the man as to give the casual observer the impression of a different person. In CHARCOT'S clinic these startling changes of personality and appearance were very clearly illustrated. Many of these so-called hypnotic states are said to be more or less common to persons who are regarded as normal and well. However this may be, it is clear that many and most complex psychical changes of the brain may be registered on the face with such rapidity as to baffle our sense of time. It would be by no means strange that some psychic force should in a brief time transform the face and general appearance so that the person could not be easily recognized, thus making it possible to disappear.

DR. LUKE describes a case of this sudden profound transformation of face and appearance of one who was seized with a suicidal impulse. He was locked up and in a brief time this passed away. Practically this subject suggests the necessity for more accurate observation and study in medico-legal questions involving the possibilities of personal and facial changes. Also that the physiology and psychology of the face, seen at different times and conditions is a practical field of study that will reveal many facts at present unknown. In the very prominent LORD will case, the question was: "Could the testator have left his home at midday, walked down a long street, rode six miles on a horse car and not be recognized by some one, especially where he was so well known?" It was proven that he did this, but that he wore a better hat and suit of clothes than usual; also that he was under great emotional strain of indignation and excitement. On this occasion he must have been seen by at least a hundred persons who were acquainted with him, no one of whom recognized him. He probably had a totally different expression, due to his mental condition, that with his changed suit of clothes was a complete disguise. In a murder trial at Boston the same question was raised: "Why the murderer was not seen and identified at once, in a town where he was known?" It appeared that he had changed his hat and walked the street and went about for a week or more, then gave himself up. Subsequently it was proven that the act was committed under circumstances of profound grief, and in a state of bewilderment, which finally wore away when he gave himself up. Probably the same alteration of countenance prevented his recognition at the time.

A grouping of similar cases would be of great interest, and throw some new light on many of the perplexing problems of brain disorders.

SEWER AIR AND SEWER VENTILATION.

During the past thirty years a great change has taken place in medical opinion concerning the causation of acute infectious diseases, and particularly of typhoid fever; and it is gratifying to know that every step of this change has been productive of material sanitary improvements. MURCHISON'S pathogenic doctrine became a potent factor in removing filth and giving us the relative cleanliness of the present time, while DR. WILLIAM BUDD'S theory of specifically infected dejecta, with the sewers as a continuation of the diseased intestine, led to the construction of improved sewerage systems. Faulty sewers came to be regarded as hot-beds of typhoid infection and sewer air as the medium by which it was propagated. The efforts made to exclude the latter from our houses educated the plumber, elaborated plumbing regulations and preserved us from many foul emanations. The discovery of the bacillus of typhoid and the infection of water by its presence, led directly to a higher appreciation of the importance of pure water, and in many instances to corresponding efforts to procure it. With the progress of the doctrine of a water propagation of the fever, ordinarily from contamination with specifically infected excreta, sewer air, once considered so deadly, is gradually losing its importance as a pathogenic factor. Some papers illustrative of this were read at the last meeting of the Congress of American Physicians and Surgeons. Chemists have known for years that sewer air differs from atmospheric air only in containing more carbon dioxid and less oxygen, with a little more ammonia and compound ammonias, if the sewage is in a condition of fermentation, which ought not to be the case. To none of these, however, was the deadly character of the sewer air attributed, but to the bacteria raised by evaporation from the foul moist sides of the sewers and the surface of the flowing liquid. But now come the

bacteriologists with the information that pathogenic bacteria and indeed bacteria of any kind are often less common in the air of sewers than in the air of the overlying streets, so that SIR CHARLES CAMERON in his address as Chairman of the Section of Public Medicine, British Medical Association, is fully warranted in his statement that: "The results of recent investigations in reference to the composition of sewer air seem to show that it is superior, bacteriologically at least, to ordinary air. Some of the accounts of its purity are so roseate that one might naturally conclude that a sewer outfall would be an excellent health resort. DR. JOHN BILLINGS, Deputy Surgeon-General, United States Army, goes so far as to doubt that there is conclusive evidence to prove that sewer gases have ever produced disease. PROFESSOR KOCH found only three or four microörganisms in 100 liters of the air of a Berlin sewer, while the atmosphere above the sewer teemed with them. HALDANE detected only 20 microbes per 100 liters of air in a Bristol unventilated sewer."

These and other similar results are accepted by SIR CHARLES CAMERON as obtained from the air of well constructed and well flushed sewers. In discussing the ventilation of sewers he reaches the conclusion that from a health point of view a perfectly open sewer is less objectionable than one ventilated in the ordinary way. This is an open question, but we believe that an *unventilated* sewer is preferable to either of the others. Experiments performed several years ago in the laboratory of the National Board of Health showed that the volume of air contaminated by foul organic matters is the volume of air brought in contact with them. If repeated volumes of 100 liters be drawn over putrescent matter the last volume will be as much contaminated as the first. If no air can be brought in contact with it no air will be defiled. Health officers recognize this and insist upon closed cesspools and garbage cans. In objecting to open sewers, city authorities have acted as if with a due appreciation of the principle, but in fact the action was dictated by the results of observation and experience. The closure of open sewers improved the sanitary condition of the atmosphere by preventing its wholesale pollution by contact with the exposed surfaces. But in constructing sewers of large size, and tapping them at frequent intervals for ventilation, the principle of occlusion seems to have been forgotten or sacrificed to a false idea. Air which has afterwards to be breathed by the thousands of a crowded city is brought by free sewer ventilation into a putrefactive condition. It may not be specifically dangerous, for the bacteriologic tests rarely show pathogenic bacilli, but it is not the invigorating air which should be breathed, and continued exposure to its influence appears to bring about a condition of system favorable to pathogenic developments. Openings are needful to relieve interior pressure, but all communication with the atmosphere other than for this purpose is unnecessary and generally harmful. More particularly should all ventilating grids that exhale foul odors be closed up that the purity of the street atmosphere may be preserved. A lack of sewer ventilation is not a dangerous unsanitary condition. SIR CHARLES CAMERON cites the city of Bristol as having no ventilation for its sewers; but, "if Bristol has made a mistake in not ventilating its sewers it has not paid apparently any penalty, for in the period 1881-90 only one of the large towns had a lower zymotic death rate."

END OF THE PLAGUE.

A cable dispatch announces that the port of Hong Kong has been officially declared free from the plague.

And thus is scored another triumph for preventive medicine in suppressing, within a period of less than four months, an outbreak of a pestilence which, at the beginning of the Christian era and for centuries thereafter, was wont to spread to the ends of the habitable world, causing the most frightful desolation, depopulating cities and towns, turning countries into deserts and making the habitations of men to become the haunts of wild beasts; a pestilence, one epidemic of which, starting, as did this recent one, in the mysterious country of Cathay, spread to Europe and in less than five years swept away 25,000,000 victims, or one-fourth of the total population of the Continent—an epidemic which, to still further adapt the language of HIRSCH, arrested the attention of chroniclers, poets and physicians by its enormous diffusion over the whole of the then known world, by its victims reckoned in millions, and by the shock to the framework of society which it brought with it and left behind it.

The extinction of pestilence in Europe, its cessation in Egypt, Syria and Asia Minor and its infrequent appearance in India and the Far East, have all been attributed to the improvement in hygienic conditions—the greater this improvement the greater the degree of repression of the pestilence, even to the point of extinction. But the unimaginative epidemiologist already cited, writing in 1881, was not content to accept this as the sole cause. "There is certainly much that is true," he wrote, "but there is not the whole truth, in the words which AUBERT-ROCHE has chosen as a motto for his work on the plague: '*La civilization seule a détrait la peste en Europe, seule elle l'anéantira en Orient.*' Besides the system of quarantine rules, whose efficacy I can not rate too highly for reasons that I have several times explained, there is no doubt that the improvement in hygienic conditions which has been going on for cen-

turies in the civilized states of Europe, has contributed very greatly to the gradual decrease and final extinction of the plague. But whether that is the whole solution of the problem is very doubtful. Still less can one admit this factor to be the sole explanation of the cessation of the pestilence in the East, although there also, and particularly in Egypt, the good effect of sanitary rules on the remission of the pestilence can not be altogether ignored. These, and many similar questions in the history of national sickness, have no answer to get from science as far as we have gone; and it is well that we should recognize these limitations in our knowledge of the laws that regulate the appearance, the prevalence, the remission and the extinction of pestilences."

We have gone further in science since this doubt was expressed, and PROFESSOR KITASATO's discovery of the specific cause of the bubonic plague confirms the wisdom of HIRSCH's judgment. Where the developments of sanitary civilization have advanced sufficiently to destroy the conditions necessary for the existence and growth of the plague bacillus there the plague has been annihilated; where these necessary conditions may occur, or still exist in the unspeakable filth of the lower classes of Oriental habitations, it needs but the introduction of the specific germ to cause a reappearance of the pestilence.

And yet the discovery of the missing factor of HIRSCH's problem only emphasizes the importance of improved hygienic conditions. Given a good sanitary environment and the bacillus of the Black Death is harmless—even as are the bacilli of other filth diseases. In the paraphrase of SIR BENJAMIN WARD RICHARDSON: *Sanitas sanitatis, omnia sanitas.*

CORRESPONDENCE.

Commissioner Reynolds' Defense.

CHICAGO, Sept. 11, 1894.

To the Editor:—I beg to thank you for your courtesy in sending the proofs of Dr. Bayard Holmes' paper on "The Sweat-Shops and Smallpox in Chicago," together with your suggestion (both received to-day) that, "as he has quoted an official report," you think "it requires a notice at (my) hands."

Permit me to say that I do not see that the quotation of a report requires notice rather than the report itself.

I have not noticed the official report. The State Factory Inspector is avowedly engaged in an attempt to abolish the "sweat-shop" system. I shall do nothing to interfere with the success of that attempt; still less shall I allow myself to be drawn into any controversy over the methods employed in the attempt, since this would involve a traversal of many statements, a denial of imputed motives and a general defense of the Chicago Health Department—neither of which seems to me necessary.

For similar reasons I must decline to notice Dr. Holmes' paper other than to say that, while withholding criticism of his methods, I think I am capable of appreciating his motives and of admiring the zeal he displays in his attacks on social wrongs and abuses, real or fancied.

The lot of the reformer is not a happy lot, and something must be allowed for Dr. Holmes' fervid imagination, impulsive nature and righteous indignation against evils which resist instant correction. These qualities, laudable and even noble as they are, have heretofore in their unrestrained exercise, brought other equally meritorious essays of Dr. Holmes to naught.

I fully believe that if the Doctor had opportunity for further revision of his paper he would strike out much more than he has already done of unfounded and misleading statement and uncharitable expression of opinion. These matters, however, may be safely left with those who know the facts—who know that, "incredible" as it may seem to Dr. Holmes, not a single case of smallpox could be "traced to coats or other clothes made to order," or to any "sweat-shop" made garment; who know that the smallpox mortality in a hospital that "would disgrace Siberia by its management," has been, up to date, a fraction less than 33 per cent. of cases, while the hospital mortality in our last epidemic was 41.3 per cent. of cases; and who know that the city of Chicago, through its Department of Public Health, fought this outbreak by the most effective and economical method known to modern sanitary science, to-wit: wholesale systematic vaccination and re-vaccination—a proposition which Dr. Holmes himself would be one of the first to approve.

There is nothing of profit to the community to be gained, Mr. Editor, by further "notice" of this paper; even what is here said may be construed by some as a violation of the "altruistic" spirit of our profession of which I would not willingly be guilty. Very respectfully,

ARTHUR R. REYNOLDS, M.D.,
Commissioner of Health.

Hydrophobia—Statistics Desired.

To the Editor:—Will you permit me, through your columns, to ask that my professional brethren will communicate to me the occurrence of cases of so-called hydrophobia in their practice for the year 1894, from January 1, and so on until the end of this year?

I would like in all cases to learn: 1, the sex and age of patient; 2*a*, the kind of animal that is credited with the inoculation; 2*b*, its state of health; 2*c*, the provocation to bite (if any existed); 2*d*, the reasons why the animal was (if it was) deemed rabid; 3, the seat of the bite (or other mode of inoculation); 4, the fact and method of cauterization (if any); 5, the time between the inoculation and the outbreak; the symptoms of the outbreak—the occurrence of mania or imitation of dog actions; 7, the remedies used and doses, with their seeming effect; 8, the issue of the case and when death occurred; 9, the investigations made to exclude the presence of disease other than so-called hydrophobia; 10, the findings on autopsy—if one was held.

I shall acknowledge in future publications aid received in continuing my studies in regard to this subject.

Yours respectfully, CHARLES W. DULLES, M.D.
4101 Walnut Street, Philadelphia.

SELECTIONS.

The Ohio Law—Is It Constitutional?

The following will appear in the *Columbus Medical Journal* September 18:

The recent arrest at Mansfield, of Mr. Ottman, the notorious traveling quack who has his headquarters at Columbus, has precipitated a suit for the purpose of contesting the constitutionality of an ordinance passed by the council of Mansfield, Ohio, during the winter of 1892.

Over a year previous to the passage of this ordinance a petition was signed by nearly every physician, dentist and druggist in the city, and presented to the Health Officer, requesting the passage of a law that would protect the citizens of Mansfield from the designing schemes of traveling charlatans.

In accordance with this petition the writer who was then Health Officer, drew up the following ordinance which was submitted to a committee of attorneys and afterwards unanimously passed by the council on Nov. 29, 1892, and which reads as follows:

REGULATING THE REGISTERING OF PHYSICIANS, MIDWIVES, PHARMACISTS AND DENTISTS.

SEC. 6.—It shall be the duty of every physician, midwife, pharmacist and dentist practicing in the city of Mansfield, Ohio, to register in a suitable book prepared therefor by the Health Officer, which register shall contain the name, the street address, the college at which said physician, midwife, pharmacist or dentist graduated, and the date of said graduation, and, further, that on and after the adoption of this ordinance no person shall be permitted to practice the art of medicine, surgery, midwifery, pharmacy or dentistry, or sell medicine or drugs from house to house or on the streets, without registering with the Health Officer and furnishing him, when so required, a sample bottle of the medicine to be sold, for analysis, and displaying to him their certificate from the State Board of Pharmacy, in the case of druggists, or their diploma of graduation from a recognized, chartered medical school, in the case of a physician, surgeon, midwife or dentist, and that such persons shall not be eligible to receive a license from any city officer until they have displayed the above mentioned documents or drugs, as the case may be, to the Health Officer and received a certificate from him to the proper city officer, who then shall have the privilege of issuing the said person the necessary license, which shall not be less than ten dollars or more than fifty dollars a day; and further that any person violating this ordinance shall be subject to a fine of not less than fifty dollars nor more than one hundred dollars for each offense. In the selling of drugs this ordinance is not intended to apply to regularly recognized traveling salesmen, who deal directly with the physicians or druggists of the city.

Immediately after the passage of this ordinance it was put into effect and strenuously adhered to by the Health Department which required every physician, druggist, dentist and midwife practicing their profession in Mansfield to properly register with the Health Officer and receive from him a legal certificate to practice within the corporation limits of that city.

By this ordinance, those who were *not* legally qualified to practice medicine, dentistry or pharmacy were at once shut out and refused a certificate. Those who *were* legally qualified were granted a certificate by the Health Officer, to the Mayor, who issued them a license for each day they practiced their profession in the city, which license cost them from $10 to $50 a day. It will be readily seen that this law practically annihilated the quack business in Mansfield; they gave it a wide berth. Later on other towns followed the initiatory steps taken by Mansfield, until Mr. Ottman found his heretofore lucrative business very greatly infringed upon and finally decided to contest the constitutionality of the law by attempting to practice medicine in the city of Mansfield *without* a license, whereupon he was promptly arrested by the sanitary officer, brought before the mayor, pleaded not guilty, and placed under a bond of $100 for his appearance on September 29.

Mr. Ottman has retained the Hon. Thomas E. Powell, of Columbus, and Hon. C. E. McBride, of Mansfield, for his counsel and the case will be hotly contested from start to finish, as the authorities of Mansfield are determined to carry it to the Supreme Court, if necessary, to get a final decision.

This case not only involves many interesting points of law, but is of decided interest to every honorable practitioner in the State of Ohio. If the ordinance is sustained it sets a precedent whereby each city can enact its own laws for the protection of its own citizens against the nefarious practice of traveling charlatans and quacks. If, on the other hand, an adverse decision is obtained it throws the doors wide open, and invite quacks of all kinds and characters to walk in and help themselves without money and without price. A similar case was tried a few years ago in Kentucky and carried to the Supreme Court which confirmed the authority of a council to pass an ordinance of this character and thus protect its citizens from quackery. It is to be hoped that Ohio will be the next State in the Union to obtain a similar decision.

A Literary Friend of the Doctors.—The versatile Eugene Field writes the following in the "Sharps and Flats" column of the Chicago *Record:*

Just at this time we are interested by the acrimony exhibited by certain medical journals over the crusade which is being prosecuted by a New York publication against the practice of vivisection. We take it for granted that *Life*, the publication referred to, is sincere in the so-called crusade which it has undertaken, and we are free to confess that we have an instinctive horror of the practices of vivisection. The folly into which *Life* has fallen is a wholesale abuse of the medical profession at large; there is equal unwisdom exhibited by the medical journalists in bristling up and scurrying to the defense of a profession that really requires no defense.

Saying sharp things is easy enough when one is indifferent to consequences; this is particularly true when the target for sarcasms is an illustrious one. For centuries the docter has been riddled with pleasantries and sarcasms; if he had not been good and great he would not have been made a mark for brilliant savageries; if he had not been good and great he would have been swept away long ago by the flood of sharp but not always sincere criticism. Priests and physicians have from time immemorial come in for a large share of what we might call sportive hostility; the world has laughed over these jocularities, yet at the first appearance of spiritual or physical disquietude, the world has sent post haste for the priest or the doctor. This curious perversity is thoroughly understood by the doctores divinitatis and the doctores medicinæ themselves, and it was none other than Dr. Francis Rabelais who embalmed and illustrated it in the immortal couplet:

"The devil was sick, the devil a monk would be;
The devil got well—the devil a monk was he."

We have always thought that in this couplet were most cleverly illustrated the three essentials to the perfect epigram as prescribed by Martial:

"Three things must epigrams, like bees, have all;
A sting, some honey, and a body small."

It is related that Montaigne used to require of his friends that if ever he fell sick they should not send for the doctor until he got better. It was probably about the time of Molière that the story about throwing-away-the-medicine-and-getting-well originated, for when the Grand Louis asked Molière what he did for his doctor, the dramatist answered: "Sire, when I am ill I send for him. He comes; we have a chat and enjoy ourselves. He prescribes; I don't take it, and I am cured." It was probably not until after the evolution of the country editor that the world was apprised, in the very best of faith, that occasionally some people "died without medical assistance." And doubtless there are few of us who have not heard of the man who, having obtained a prescription for insomnia, administered it to his teething baby and enjoyed an unbroken night's rest. These and similar sarcasms upon the medical profession we enjoy, not because of their truth, for we know well enough that they have very little truth in them, but because perhaps, there is a teasing quality in them, and, as Victor Hugo has said, teasing is the malice of good men.

It has been our fortune—our good fortune—to have an acquaintance with many doctors, and we agree with the opinion expressed by the leviathan of English letters when he declared: "I believe every man has found in physicians great liberality and dignity of sentiment, very prompt effusion of beneficence and willingness to exert a lucrative art where there is no hope of lucre." What we particularly admire the doctor for is what he often achieves outside of his profession; the avocations of the physician are notably productive of noble results. Many of the most successful journalists in this country have been doctors; and so have been, or are, many of our most charming writers upon gen-

eral and special subjects. In this city at the present time there is a practicing physician who has made pottery a study and a practice, and he has done more, probably, than any other man toward perfecting the glaze of native pottery. Dr. Oliver Wendell Holmes has done more than simply to adorn and dignify his profession; he has adorned and dignified American literature. The first martyr to the cause of our national liberty was a doctor; the fall of Warren fanned to a blaze the fire of American patriotism. A Dr. Osborn of Massachusetts wrote years ago a whaling song that bids fair to outlive the giant mammal and its adventuresome pursuit which that song celebrated. How largely is not science indebted to Morton, DeKay and Barton, and who that has read his poems and his tales has not acknowledged the literary genius of Weir Mitchell? Akenside was a doctor; so was Cowley, so was Goldsmith; before the days when these literary physicians flourished Sir Walter Raleigh was proud of his fame as the compounder of a cordial and Sir Kenelm Digby was known afar for his recipe for a sympathetic powder which wrought wonders. We remember to have read somewhere that Marat was a doctor, but we have never been able to confirm this story of his earlier life. Arbuthnot was certainly one of the greatest in his profession and his literary abilities and his wit were exceptionally charming. Alexander Pope acknowledged the debt he owed to this physician in ministering to his physical sufferings:

> "Friend of my life, which did you not prolong,
> The world had wanted many an idle song."

Again, the literary claims of the profession are to be recognized in the poems of James Rodman Drake and in the ever-popular novels of Charles Lever. It was a doctor, Lestocq, who aided Catherine materially in her struggle for the throne; another doctor, Hamond, was master to the great Racine; Peter the Great cultivated an intimacy with Boerhaave; Hans Sloane provided the nucleus of the British museum; Madden's "Infirmities of Genius" and MacNish's "Philosophy of Drunkenness" are two books that should be in every library. Two other famous books are Dr. Middleton's "Life of Cicero" and Dr. Sir Thomas Browne's "Religio Medici." Rousseau was an invalid all his life. Says he of the physician: "Par tous les pays ce sont les hommes les plus véritablement utiles et savants." The essayist Tuckerman instances the Médecin de Campagne" of Balzac and the "Dr. Antonio" of Ruffini as elaborate and charming illustrations of the testimony given by Rousseau.

Quoth the learned Park: "I hold physicians to be the most enlightened professional persons in the whole circle of human arts and sciences."

But there! we did not intend to say so much upon this subject. The doctor requires no defense, and if he did he could defend himself. We have been led into this idle, desultory chat about him by our sincere affection for him, for we certainly share with all other good folk their admiration and love for this bright, generous, patient, self-sacrificing friend of humanity.

BOOK NOTICES.

Hare's Text-Book of Practical Therapeutics.—A Text-Book of Practical Therapeutics; With Especial Reference to the Application of Remedial Measures to Disease and Their Employment upon a Rational Basis. By HOBART AMORY HARE, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia. With special chapters by DRS. G. E. DE SCHWEINITZ, EDWARD MARTIN and BARTON C. HIRST. New (4th) edition, thoroughly revised and much enlarged. In one octavo volume of 740 pages. Cloth, $3.75; leather, $4.75. Philadelphia: Lea Brothers & Co. 1894.

When a book has passed to its fourth edition it has passed the point when the written word of the reviewer can help or materially harm. This edition has been largely rewritten, and accounts of several new remedies added.

"Articles on Methylene Blue, Chloralose, Pyrogallol, Condurango, Convallaria, Duboisine and other remedies have been added to the part of the work dealing with drugs. In the part dealing with remedial measures other than drugs, articles have been written on Hypodermoclysis and Enteroclysis, Lavage, and upon Mineral Springs and Climatic Treatment."

In order to conform to the new Pharmacopœia the doses of drugs are given in the metric system, and for those unfamiliar with that system the old dosage has been also retained. A posologic table has been added in both the old English system and the metric.

We are pleased to note that Dr. Hare has, in this edition, given especial prominence to American climatic health resorts, and although very brief it is a good beginning.

Chemistry: General, Medical and Pharmaceutical, including the Chemistry of the U. S. Pharmacopœia. A Manual on the General Principles of the Science and their Applications in Medicine and Pharmacy. By JOHN ATTFIELD, F. R. S., etc. Cl., pp. 794. Fourteenth edition. Philadelphia: Lea Brothers & Co. 1894.

Attfield's Chemistry in its latest dress, is again upon our table, and it is like looking on the familiar face of an old friend. The changes that have been made in this edition are such as are necessary for the demonstration of the latest developments of chemical principles, the latest applications of chemistry to pharmacy, and to make it conform to the last revision of the U. S. Pharmacopœia. The book has always been a favorite text-book with students in medicine and pharmacy, and if the publishers keep it up to the date of each successive revision as well in the future as they have in the past, it will continue to be the favorite for very many years to come.

NECROLOGY.

RAMON TAGUIMETTO, M.D., of Brooklyn, N. Y., died August 26, at Bensonhurst-by-the-Sea, in the forty-second year of his age. He was a native of Havana, Cuba, of Spanish parentage. He had been sick for several months, having become the subject of both renal and cardiac disorders. He was a man of high intelligence and much culture.——Henry Worthington Webster, M.D., at Baltimore, Md., August 29.——J. W. Campbell, M.D., at Ottumwa, Iowa, August 26.——W. D. Chase, M.D., at Peterboro, N. H., September 2, aged 57. He represented Peterboro in the New Hampshire Legislature in 1889.——Hilborn T. Cresson, M.D., of Philadelphia, at New York City, September 6.——Henry James Brown, M.D., at Detroit, Mich., September 6, aged 81.——A dispatch from Tiffin, Ohio, September 8, says: The body of Dr. William B. Seymour, the Tiffin physician who left here last Christmas and whose disappearance from New Market, Va., was noted last June, has been found in the mountains four miles from New Market with both arms broken. The indications are that the old man, who was in his 85th year, had fallen over a ledge and afterward starved to death. Dr. Seymour had no relatives here, and was supposed to have been quite wealthy.——C. E. Wasson, M.D., at Spruce Creek, Pa., September 7.——S. B. Merrill, M.D., at Chicago, September 11.

ASSOCIATION NOTES.

The Journal and Abbreviations.—Abbreviations are things we do not like, as previously announced in these columns. But our exchanges do not all agree with us, and a few still insist in crediting extracts to the "*Jour. Am. Med. Ass.*" As the *Journal* has but one resemblance to the long-eared animal, in that its voice is heard for a very long distance, we can see neither propriety or sense in continuing such reference. As there is but one *Medical Record*, and as there is but one *Medical News*, so there is but one *Journal*. It is *The Journal* of the great medical profession of this country. We do not speak of the *Medical Record* as the *Medical Record* published by Wm. Wood & Co., and edited by Dr. Geo. F. Shrady. We simply say the *Medical Record*, and that is all. Therefore, let us speak of *The Journal*, and drop all superfluities.—*National Medical Review.*

SOCIETY NEWS.

Seventeenth Annual Re-union of Pennsylvania and Maryland Physicians.—The physicians of the Counties of York, Lancaster, Cumberland, Dauphin, Lebanon and Berks, Pennsylvania, and Cecil and Harford Counties, Maryland, held their seventeenth annual re-union at Chickies Park near Columbia, Pa., on Thursday. About one hundred and fifty physicians with their families and friends were in attendance and spent a most delightful day. The heavy smoke filling the atmosphere prevented a full enjoyment of the magnificent scenery from the celebrated Chickies Rock, but otherwise the day was greatly enjoyed.

At 12:30 o'clock the party was brought to Columbia on special electric cars and taken to St. Paul's Protestant Episcopal Church. They then adjourned to the parish building in the rear, where they partook of a dinner, which was served them by the ladies of the church.

After dinner the members with their families and friends boarded the special and returned to Chickies Park, where the business meeting and election of officers of the Society was held, presided over by President Frey, of York.

Following are the present officers of the Association:

President—Dr. Levi Frey, York.

First Vice-President—Dr. George R. Welchans, Lancaster.

Second Vice-President—Dr. J. W. Trabert, Annville.

Secretary—Dr. Roland Jessop, York.

Treasurer—Dr. George M. Stump, Perryville.

Executive Committee—Dr. Alex. Craig, Columbia, Chairman; Dr. George W. Gillespie, Oxford; Dr. A. C. Wentz, Hanover; Dr. R. A. Bromwell, Port Deposit; Dr. T. R. Bucher, Lebanon; Dr. W. Murray Weidman, Reading; Dr. H. A. Hare, Philadelphia.

Following is a list of physicians in attendance, each one being accompanied by one or more persons:

Drs. Bacon, York; Mowery, Letort; Morris, Baltimore; Wentz, New Providence; Foster, Pittsburg; Gillespie, Oxford; Ritchie, Harrisburg; Welchans, Lancaster; Musser, Lampeter; Gable, York; Berntheizel, Columbia; Trabert, Annville; Bromwell, Port Deposit; Small, York; Daxe, Rising Sun; Potteiger, Harrisburg; Shellenberger, Philadelphia; Gillespie, Pleasant Grove; Ulrich, Chester; Alexander, Marietta; Livingston, Columbia; Deisinger, Hellam; Middleton, Steelton; Weidman, Reading; Miller, Bird-in-Hand; Seitz, Harrisburg; Quickel, Manchester; Spangler, York; Rohrer, Lancaster; Lehman, Mountville; Frey, York; Wentz, Hanover; Black, Strasburg; Cleaver, Reading; Leaman, Leaman Place; Mowery, Marietta; Netcher, Lancaster; Carfield, Baltimore; Stover, Chester; Bucher, Lebanon; Marshall, Shippensburg; Morton, Philadelphia; Landis, Reading; Jamar, Elkton; Reynolds, Baltimore; Yost, Bethesda; Guilford, Lebanon; Harter, Maytown; Zeigler, Mt. Joy; Warrell, Elkton: Davis, Lancaster; Simmons, Baltimore; Kirk, Oxford; Craig, Markel, Backius and Lineaweaver, of Columbia.

PUBLIC HEALTH.

Typhus Fever in Paris.—From January 1 to July 4 of this year, forty-seven cases of typhus fever were recorded in Paris, with twenty-two deaths. In June there were twenty cases and nine deaths and in the first four days of July, six cases and four deaths. This increase led the Advisory Committee on Public Hygiene of France, to issue a circular requesting the authorities of Paris to take steps toward disinfecting in the most thorough manner those "shelters for the night" established by private munificence.

Disinfection by Ammonia Vapors.—Dr. von Rigler, of the Hygienic Institute of Buda-Pesth, proposes (*Concours Médical*) a new method of disinfection. He suspended threads impregnated with microbic cultures in a room 100 cubic meters in size, 1000 grams of ammonia being placed in numerous flat dishes on the floor. At the end of one hour 100 grams of the ammonia had evaporated; in two hours, 250 grams; in four hours, 350; at the end of eight hours 450. The bacilli of cholera and of typhoid fever were killed after two hours; of anthrax, with or without spores, after three hours; the Löffler bacillus only after eight hours. This method is cheap and has the added advantage of not being injurious to furniture, drapery, hangings, etc. It is to be hoped that the results of these experiments may be corroborated; effective disinfection by ammonia vapors would remove many existing difficulties in the way of quarantine practice.

Ammunition of the Anti-Vaccinist.—In a circular recently issued by the London (Eng.) Society for the Abolition of Compulsory Vaccination, it is asserted that the death rates in the smallpox outbreak in Leicester in 1892-93 were as follows: "Death rate from smallpox of the *re*-vaccinated, 270 per million living; of the vaccinated, 159; of the *non*-vaccinated, 109 only." These figures are made the basis for the usual argument against vaccination and it may be expected that they will shortly be reproduced by the anti-vaccinist on this side of the Atlantic. That they are absolutely false will not prevent their citation by the propagandist of free smallpox nor their unhesitating acceptance by his dupes. Nevertheless it may be worth while to say that there was no death of a *re*-vaccinated smallpox patient in Leicester and that the actual death rate of the three classes of the population of that city, during the outbreak of 1892-93, were as follows:

Re-vaccinated	0.0 per million.
Vaccinated	5.4 " "
Non-vaccinated	102.7 " "

The circular and its unblushing mis-statements are fair specimens of the ammunition furnished to the "anti's" for their warfare upon vaccination.

Typhoid in Buffalo.—The recrudescence of typhoid fever in Buffalo is attributed by Health Commissioner Wende to the use of water from the 400 old wells remaining in the city, many of which are found on examination to contain the typhoid bacillus. The people persist in the use of these wells because they say: "The water was good enough for our fathers and our grandfathers, and it's good enough for us." Dr. Wende anticipates trouble in securing the abandonment of these polluted wells and fears a renewal this fall of the epidemic of last spring.

Sanitorium for Tuberculosis.—The Municipal Council of Paris has decided to establish a sanitorium for consumptives in one of the suburbs, a few miles from the city. The report of M. Paul Strauss, (*Gaz. Méd. de Paris*) which led to this action, gives the following reasons for its establishment: The first advantage which will be gained is the cleaning out of the general hospitals, which are too often occupied by the chronic consumptives at the expense of the acute; this alone would not justify special hospitals, but, unhappily, the great number of consumptives do not gain access to hospitals—they are habitually refused, and if they are received in the wards they do not receive the particular care they need, and there is risk of transmitting the germs of their disease to the other occupants of the wards. General hospitals are not adapted to the treatment of this class of cases, which are of long duration; they are not built or situated for that purpose; the unfortunate patients have not the privilege of wintering in a suitable climate; distress weakens their chances of survival and the disease has, so to speak, a clean field. Such noted authorities as Bouchard, Cornil, Brown-Séquard, Grancher, Jaccoud, Peter and others have proven beyond a doubt the curability of tuberculosis and the efficacy of its hygienic treatment. The experience of the sanatoria of Falkenstein, Gorbersdop and Hohenhonnef shows the value of the results obtained by permanent aeration, forced alimentation and hydrotherapy. In ten years the sanatorium at Falkenstein has a record of 24.2 cures per 100, and Dr. Neisser at Hohenhonnef shows 27 per cent. of cures.

Epidemic Diseases.—Asiatic cholera continues to spread in Europe, especially in Russia and in the provinces of East and West Prussia. During the week ended September 11 there were reported 6,376 new cases and 4,192 deaths in all Russia; the disease is most virulent in Radom where there were 1,238 new cases and 617 deaths; in Kielce there were 1,138 new cases and 565 deaths, and in Warsaw 1,100 new cases and 532 deaths. The disease has also appeared at Riga, a fact which derives importance from the extensive communication of the port both by water and rail. For this season, however, the disease is fast losing interest so far as this country is concerned. The suspicious death of a Bavarian immigrant at Cumberland, Md., on the 5th inst., hardly caused a ripple of excitement; a bacteriologic examination by Passed Assistant Surgeon Geddings, M. H. S., showed that death was due to ptomaine poison from improperly cooked food. Suspicious sickness on the *Werra*, from Genoa at New York, September 10, also proved to be non-contagious.——Some alarm was occasioned at Baltimore on the arrival of a British steamer from Havana on the 8th inst., with alleged cases of yellow fever on board, supplemented by the arrival on the following day of an American bark, infected with the disease, at the Cape Charles (Va.) quarantine station. The season is too far advanced to make any extension of the disease probable.——The prolonged drought has caused an increase of typhoid fever in many localities, owing to the increased density of pollution of water courses and the resort to old disused wells as a source of supply. The Passaic River at Jersey City is so low that the pollution from the cities of Newark, Paterson, Passaic, the Oranges and other towns, and from the many factories, dye houses, gas works, slaughter houses, sewers, etc., that drain into it, has made it wholly unfit for drinking purposes. The nuisance has become so intolerable and the menace to public health so great that it will probably compel the city government to provide a new and more wholesome water supply.——Smallpox threatens more seriously than any other of the epidemic contagious diseases. Correspondence of health authorities with the JOURNAL indicates considerable apprehension for the coming winter on this account. During August there were 117 cases of the disease in Chicago; the situation in Milwaukee can hardly be said to have improved recently; an increase is reported in New York; Indianapolis is threatened with a general outbreak through a mistaken diagnosis, and at Walkerton, Ind., several well-developed cases have appeared as the result of the deaths of the wife and mother of a local physician from a disease, which is now pronounced to have been smallpox. Health officers in other localities are also in a state of mind over the situation, similar to that of "Hosea Biglow's" during the war—

"all one teeter, hopin', dreadin'."

Extension of Glanders due to Public Water. The Brooklyn Board of Health issues a Circular of Information.—Not only in Brooklyn, but in several of our Eastern cities, there has been a recrudescence of glanders and farcy. The sanitary authorities of the former city seek to bring about a diminution of the disease by enforcing a full reporting of cases by veterinarians and others, and also by causing the non-use of public watering troughs that are possibly infective. The following are selections from an article that has recently appeared in a Brooklyn daily journal:

"The Department of Health is measurably responsible in the matter of checking the progress of contagious disease among animals. For this reason it is one of the requirements of the city ordinances that the Department shall be notified of all cases of glanders or farcy. Section 31 of the Sanitary Code, is as follows:

SECTION 31—That no cattle shall be killed for human food while in an overheated, feverish or diseased condition; and all such diseased cattle in the city of Brooklyn and the place where found, and their disease shall at once be reported to the Department of Health by the owner or custodian thereof, and it shall be the duty of every veterinary surgeon, owner or person having the charge, care or custody of any horse, ass, mule, colt, ox, milch cow, calf, sheep, or goat, or any other animal affected with glanders or farcy, pleuro-pneumonia, tuberculosis or other disease infectious, contagious or pestilential, among such animals to report the same to the Department of Health within twenty-four hours of their knowledge of such disease, stating where located.

"The early coöperation of all veterinarians will have the effect of restricting the progress of the disease.

"Furthermore, doubtful or suspicious cases may be reported and the assistance of the Department in this way be obtained as to diagnosis and sanitary precautions; and 'mallein,' a new substance prepared at the Bureau of Animal Industry, Washington, D. C., is at command of the Inspector of the Department for the settlement of suspicious cases at an earlier stage of the disease than can be otherwise reached.

"This is the circular of information to the owners of horses:

'Notice is hereby given that glanders is a disease among horses manifesting considerable prevalence at the present time, and that no little loss has lately been experienced by those so unfortunate as to have animals affected by this disease. It is the belief of the veterinary inspectors of this and other Departments of Health that the disease is spread among horses by means of the public watering troughs situated on many of the public thoroughfares. It is expedient therefore, that all persons owning horses and all drivers of teams should be cautioned against this danger from watering their horses at these public troughs. All drivers who are compelled to remain away from their private sources of water supply for any considerable period of time are advised that a safe course for them to pursue will be to provide a pail which can be carried in the truck or vehicle, or hooked under the wagon body. Into such a pail running water can be given, freshly drawn and clean, whenever the animals are in need of water.

'All veterinarians and horse-owners are required by Section 31 of the Sanitary Code to report to this Department all cases of glanders. Any person having a horse or other animal suspected of being affected by an infectious disease may, on application at this Department, have the services of our Veterinary Inspector for the purpose of promptly determining the diagnosis.'"

MISCELLANY.

Physicians' Protective Association.—The first annual meeting of the Physicians' Protective Association of Detroit, was held September 4. Reports of officers showed a prosperous year, $9,916 in outstanding accounts having been collected. Officers for the ensuing year were elected as follows: President, L. J. Lennox; Vice-President, Dr. R. H. Stevens; Secretary, Dr. P. M. Hickey; Treasurer, Dr. S. H. Knight.

International Congress of Gynecology and Obstetrics.—At the second session of this Congress, to be held at Geneva this month, the following topics will be discussed: The treatment of eclampsia; the surgical treatment of retro-deviations; the relative frequency of the various pelvic contractions in different races; the best method of suturing the abdominal wall to prevent ventral hernia; treatment of pelvic suppurations.

Mysterious Disappearance.—Cassopolis, Mich., has had a sensation similar to that caused in Chicago a few years ago by the murder of Dr. Cronin, in the disappearance of Dr. A. B. Conklin. He was to have been a witness in an insurance case trial at Traverse City, Mich. He is believed to have been abducted and perhaps murdered. The abduction occurred September 4. A reward of $2,000 has been offered for his body.

Quills from the Fretful Porcupine.—Dr. Gagen, of Heppner, while out gunning last Sunday, shot and fatally wounded what he supposed to be a badger. Fearing that the animal would get away from him, he ran and seized it with both hands,

but immediately let go again. It proved to be a porcupine instead of a badger. It took him about two hours to pick the quills out of his hands and arms.—*Ellensburgh* (Wash.) *Localizer*, September 1.

Medical College Opening.—The College of Physicians and Surgeons of Chicago held its opening exercises September 5. There were 200 matriculates in attendance. The introductory was given by Dr. W. S. Christopher.

Doctors' and Lawyers' Fees Again.—In Brussels, during 1893, twenty-one medical men received 8,745 francs for services rendered to the *personnel* of the railway, postoffice, telegraph and telephone departments of the government. For services rendered to the railways alone, *three* lawyers received 18,000 francs.

Medical Journalism in Russia.—There are, according to the *Journal de Médecine de Paris*, thirty-eight medical journals in Russia at the present time. Of these twenty are published in St. Petersburg, five in Moscow, four in Warsaw, two in Odessa, two in Charkov, and one each in Kasan, Kieff, Saratov, Varsovege and Poltova. The oldest journals are the *Medizinskoie Obozrenie* (Review of Medicine), twenty-first year; the *Rousskaia Medizina* (Russian Medicine), nineteenth year; and *Wratch* (The Doctor), fifteenth year.

An Electric Ambulance.—An ambulance, moved by electricity on the street-car lines of St. Louis, made its first trip in that city recently. The experiment was so successful that it is proposed to place these ambulances on every car line in the city to make trips at stated intervals. It is anticipated that when the plan is perfected, patients can be removed to the City Hospital from any part of the city in less than an hour, and that the service will save thousands of dollars annually as compared with the present ambulance service.

Distribution of the Sexes.—In the population of the whole earth the number of females is very nearly equal to that of the males; but, according to the *Journal de Médecine de Paris*, there are marked variations in different countries. Of all the countries on the globe, France is the one where the sexes are most nearly equal, there being 1,007 females to 1,000 males. For the same number of defenders of their country we find 1,064 females in Sweden and only 933 in Greece. In the French island of Réunion 547 Creoles or brown mulatresses can choose between 1,000 Frenchmen—including those with black skins. In Hong Kong for every 1,000 males there are but 366 females.

Oldest Physician in the Country.—Since the recent death of Dr. James Kitchen, of Philadelphia, Dr. Hiram Corson, of Montgomery County, Pennsylvania, is declared by Philadelphia papers to be the oldest physician in the United States who has been in continuous practice. He will be 90 years old next October, and has been in active practice since 1827. He is still in excellent health, with astonishing preservation of his physical and mental powers. Dr. Corson is now writing his personal recollections of the anti-slavery movement, in which he took an active part, having assisted many a fugitive slave to escape by the "underground railroad." He has frequently contributed to the JOURNAL and we hope soon to have an article from him.

Fighting the Diploma Trade.—Dr. C. T. Metcalf, Secretary of the Indiana State Board of Health, has instructed the county boards of health to notify clerks of court to refuse licenses on the diplomas of the "Marion Physico-Medical School of Indiana and Marion." This institution does not appear in the list of existing medical schools in the Illinois Report on Medical Education—either among the "reputable" or "fraudulent" institutions—and it is alleged that it grants degrees after three weeks' study and issues diplomas for the sum of $25 each. Application has been made in the Delaware County (Ind.) Circuit Court by the holder of one of these diplomas for a mandamus to compel the clerk to issue a license thereon. The Indiana State Board will resist the application on behalf of the clerk.

Illness of Prominent Persons.—Professor Aoyama, who, with Professor Kitasato, was dispatched by the Imperial Japanese Government to Hong Kong to study the plague, has had a serious attack of the malady, from which, although reported on the 1st inst. to be convalescent, he is suffering pyemic complications. Dr. Aoyama was making a special study of the pathological and clinical features of the disease while Kitasato is investigating its bacteriologic character.——Robert Koch is suffering from the effects of overwork and has had to resort to the famous water cure at Woerishofen of Father Kneipp, the Bavarian priest and preacher of hydrotherapathy. On a recent visit to Rome, it is said, that this advocate of the "wet pack" and the douche was consulted by Leo XIII. for the relief of certain ailments, due to advanced age, from which his Holiness is suffering. The Pope was advised to apply cold compresses to his knees and to the back of his neck, and did so with rather disastrous results. He caught quite a severe cold, and both knees became so swollen that he was forced to call upon his own physician to combat the consequences of the experiment.——It is recalled that the diagnosis of the case of the Comte de Paris, who died last week of cancer of the stomach, was made by the electric illumination of that organ, by means of which, we are told by a European correspondent, the operator was "able to detect through the skin an incipient cancer or ulcer on the left wall of the organ. The doctors then discussed the desperate expedient of the excision of the entire stomach and the substitution of the same organ from a lamb, an operation which has been successful in one case in French surgery. The risk was deemed too great, and the patient was not informed of the real nature of the disease until recently." The Marquise de Fontenoy says (Chicago *Record*): "It is curious how prevalent this particular affliction has been among the members of those houses that have reigned over France," and cites the late Comte de Chambord, the first Emperor Napoleon, his nephew "Plon-Plon," the late Prince Jerome, as well as his brother, King Louis of Holland, as victims of the malady. King Louis XVIII. was carried off by the same insidious disease, while his successor, King Charles X., although he fell a prey to cholera, was found after death in exile at Coeritz to be similarly afflicted. Louis XII., Louis XIII. and Louis XIV., as well as Francis I., also succumbed to abdominal troubles of a cancerous sort.——A Berlin dispatch of the 1st inst. says that it is reported there that the Czar Alexander, was recently examined by Professor Sacharjin, the specialist, who discovered a renal calculus as the cause of the sufferings which have previously been attributed to the sequelæ of influenza.——Queen Victoria suffers so much from rheumatism, confined almost exclusively to the knees, that she has abandoned her proposed trip to Italy, and will go instead to Aix les Bains or Wiesbaden for a course of the waters and to undergo massage. The Princess of Wales is a victim of the same painful malady. The Crown Princess Victoria is dying from consumption.——The *Medical Record* of September 8, mentions that the Shah of Persia is troubled with his eyes and is in poor general health; that Signor Crispi, the Prime Minister of Italy, is slowly recovering from injuries received in a fall; that the Queen of Italy is suffering from nervous shock occasioned by the sudden death of one of her attendants in her presence; that the wife of Prince Bismarck is ill, and it is feared that should she not recover the Prince himself will break down entirely; that Mr. Gladstone was recently operated on for cataract; that the young King of Spain is very delicate, though no definite disease has yet declared itself; and that President Cleveland is reported to be suffering from malaria and the effects of overwork.——Finally, to round out the week's budget of this sort of news, the *Pall Mall Gazette* publishes a long letter from Bangkok, in which are explained the recent rumors that the King of Siam was dead. It appears that he is a victim of the chloral habit, and his illness, from which there is little prospect of recovery, is the result of the use of the drug for many years.

Washington Notes.

PUMP INSPECTION.—Four pumps have been condemned during the past week and ordered closed.

RULES FOR DISINTERING BODIES.—Regulations have been prescribed by the Commissioners, governing the disinterment and transfer of bodies from Graceland Cemetery, as provided by an act passed at the last session of Congress. Written application must be made to the Health Officer, bearing the signature of the secretary of the cemetery association, giving name, age, date, and cause of death. No disinterment will be permitted during the months of June, July, August and September, and no body of a person under 12 years of age may be disinterred within a year from date of burial.

Upon disinterment, all articles of any description found in the grave, together with the remains of the coffin or casket, must be inclosed in an air-tight box and tranferred at once to the place of re-interment, and re-interment must take place within twenty-four hours from the time the remains were exhumed. Bodies of persons who die of diphtheria must be saturated with a solution of chlorid of lime before removal, and the grave must remain open for a period of twenty-four hours.

HEALTH OF THE DISTRICT.—The report of the Health Officer for the week ending September 1, shows: Number of deaths, 86; white, 55; colored, 31. Death rate per 1,000 per annum: white, 14.66; colored, 17.9. Total population, 15.69. Thirty-two were under 5 years of age, 17 were under 1 year old and 15 over 60 years. Eighteen of the deaths occurred in hospitals and public institutions. The deaths by classes were as follows: Zymotic, 25; constitutional, 11; local, 41; developmental, 6, violence, 3. The principal causes of death were: Croup, 1; diphtheria, 1; consumption, 5; diarrheal, 9; erysipelas, 1; typhoid fever, 7; malarial, 1; scarlet fever, 1; pneumonia, 2; congestion of the lungs, 1; whooping cough, 2; kidney disease, 9; cancer, 1. Births reported: 25 white males, 24 white females, 19 colored males, 20 colored females. Marriages reported: 4 white, 5 colored.

As favorable as was the last health report there was a still further improvement in the mortality of the city during the past week. There was but one death from scarlet fever and one from diphtheria reported. While the total mortality during the last week was 86, there were 116 deaths in the corresponding period of last year and 110 in the year preceding that.

Hospital Notes.

THE CORNER STONE of the Julia F. Burnham Hospital at Champaign, Ill., was laid with appropriate ceremonies August 23.——Dr. Gillies, of Winnipeg, has been appointed Medical Health Officer of the Brandon Insane Asylum, to take effect Jan. 1, 1895.——The New Emergency Hospital at Milwaukee has just been completed at a cost to the city of $60,000. Drs. Frank, French, Farnham, Brown, Wahl, O'Brien, McDill, and Wingate constituted the original Board of Trustees.——The Sioux Falls, (S. D.) Hospital will be opened soon. Drs. H. Hoide and Arne Zetlitz are the chief promoters of the enterprise.——St. Mary's Church at Omro, Wis., is to build a cottage hospital to cost $15,000.——The will of J. V. de Lavaga, of San Francisco, provides for the erection of a hospital for the deaf, dumb and blind to be located at Santa Cruz, Cal., and to cost almost $1,00,000.——The Jefferson College Hospital of Philadelphia, has undergone extensive alterations and repairs, under the personal superintendency of Dr E. E. Montgomery.——The Cincinnati City Hospital is to have improvements in lighting and ventilation at a cost of $8,427.——A hospital for epileptics is to be built at Rochester, Pa., after the Bielenfeld plan, as a memorial to the late Dr. W. A. Passavant.——The physicians of Oshkosh, Wis., held a meeting August 28, and adopted the following: We the undersigned, at a meeting held at the Athearn Hotel Aug. 28, 1894, to consider the matter of establishing a hospital in the city of Oshkosh for the general good of the city, do hereby agree to do all in our power, financially and by personal efforts, to aid in the establishment and maintenance of such enterprise. (Signed) T. P. Russell, B. C. Gudden, G. M. Steele, W. A. Gordon, J. C. Noyes, L. P. Allen, Fred W. A. Brown, S. Buck Ackley, Burton Clark, W. Treptow, H. B. Dale, Willard H. Titus, A. Roos, Harvey Dale, D. W. Harrington, S. T. Lewis, E. M. Wilson.

MANAGING A FLOATING HOSPITAL.—The *Springfield Republican* (Mass.), says: "The floating hospital which has made five trips down Boston harbor this season, carrying 1,100 children, is a charitable enterprise paying quick and large returns to those who have made its ministrations possible. When the passengers arrive, gathered from the north, south and west ends of the city, they are met at the gang plank by two doctors, two assistant superintendents and a policeman. The physicians inspect the children to see that none with contagious diseases are taken on, and they also examine the packages carried by the mothers to confiscate green fruit, sausages, bananas, cold potatoes, salt pork, beer, brandy and whisky, all of which are found and thrown overboard. Then something better is provided for the babies. As soon as the boat starts the upper and lower decks are divided into wards, with a doctor and a nurse for each. The patients are then examined, and the most serious cases sent below for special treatment. The diet and medicines necessary for each child are prescribed, no charge being made if the home diet is correct, and each mother is given a ticket which is punched when she receives the first meal for the baby, and taken up at the second feeding, at 3 o'clock. The doctor and nurse are responsible for the ward under their direction.

In the meantime, preparations are made for lunch, and when the boat anchors off Hull, at noon, the food placed in neat boxes, is carried to the decks in baskets and served to the mothers, with tea, coffee or milk, tickets for these having been distributed just before the lunch time. In this way the rush is avoided, and all attention is given to the mothers. At intervals throughout the day pitchers of milk are distributed to the larger children and the mothers who wish it. The milk is sterilized in the bottles, thirty-five being prepared at once and then a spoonful of lime-water is added to each bottle before the milk is given to the little ones. On the five trips made 650 mothers were carried with the 1,100 children."

THE PUBLIC SERVICES.

Army Changes. Official list of changes in the stations and duties of officers serving in the Medical Department, U. S. Army, from Sept. 1, 1894, to Sept. 7, 1894.

Major W. H. GARDNER, Surgeon, relieved from duty at St. Paul, Minn., and ordered to Ft. Custer, Montana, for duty.

Major HENRY MCELDERRY, Surgeon, relieved from duty at Omaha, Neb., and ordered to Ft. Robinson, Neb., for duty.

Major GEORGE W. ADAIR, Surgeon, relieved from duty at Ft. Robinson, Neb., and ordered to Washington Bks., D. C., for duty.

Major JOSEPH H. CORSON, Surgeon, relieved from duty at Washington Bks., D. C., and ordered to Ft. D. A. Russell, Wyo., for duty.

Major JOSEPH K. CORSON, Surgeon, is granted leave of absence for one month, to take effect when relieved from duty at Washington Barracks, D. C., with permission to apply for an extension of fifteen days.

Major WASHINGTON MATTHEWS, Surgeon, is granted leave of absence for four months on surgeon's certificate of disability.

Capt. CHARLES B. EWING, Asst. Surgeon, is granted leave of absence for one month and fifteen days, to take effect on or about Sept. 10, 1894.

First Lieut. JAMES M. KENNEDY, Asst. Surgeon, will be relieved from duty at Ft. Custer, Montana, and will report in person for duty at Camp Merritt, Montana.

Capt. JEFFERSON R. KEAN, Asst. Surgeon, is granted leave of absence for twenty days, to take effect Oct. 10, 1894.

LETTERS RECEIVED

(A) Andrews, Edmund, Chicago, Ill.; Atkinson, W. B., Philadelphia, Pa.; Ayer, N. W. & Co., Philadelphia, Pa.; Anderson, James, Andover, Ill.

(B) Briggs, W. E., Sacramento, Cal.; Brown, Philip, Toronto, Canada; Bernd, Henry & Co., St. Louis, Mo.; Bettman, Boerne, Chicago, Ill.

(C) Cunningham, W. M., Asheville, N. C.; Cochran, Jerome, Montgomery, Ala.; Cone, Andrew, New York, N. Y.; Cook, C. E., Mendota, Ill.; Cantwell, A. W., Davenport, Iowa.

(D) Delevan, D. B., New York, N. Y.; Dulles, Chas. W., Philadelphia, Pa.

(F) Fehr, Julius, Hoboken, N. J.; Fullerton, E. B., Columbus, Ohio.

(G) Graham, Jas., Kansas City, Mo.; Graham, D. W., Chicago, Ill.

(H) Hobbs, A. G., Atlanta, Ga.; Hummel, A. L., (3) Philadelphia, Pa.; Hall, J. N., Denver, Col.; Hopkins, J. G. Thomasville, Ga.

(I) Ingals, E. Fletcher, Chicago, Ill.

(J) Jones, H. Isaac, San Francisco, Cal.; Johnson, H. L. E., Washington, D. C.

(K) Kellogg, E. W., Milwaukee, Wis.; Keyser, P. D., Philadelphia, Pa.; Keener, W. T. Co., (2) Chicago, Ill.

(M) Montgomery, E. E., Philadelphia, Pa.; McFarland, D. W., Waterbury, Conn.; Marks, A. A., New York, N. Y.; Maclean, Donald, Detroit, Mich.

(O) Oxford Publishing Co., Chicago, Ill.

(P) Percy, J. F., Galesburg, Ill.; Parmele, Chas. Roome Co., New York, N. Y.; Parish, J. C., Vandalia, Mo.; Parkhill, Clayton, Denver, Col.; Priestly, J. T., Des Moines, Iowa.

(R) Ricketts, B. M., Cincinnati, Ohio; Rochelle, W. T., Jackson, Tenn.; Roberts, John B., Philadelphia, Pa.

(S) Sayre, R. H., New York, N. Y.; Southard, W. F., San Francisco, Cal.; Schadle, J. E., St. Paul, Minn.; Scott, X. C., Cleveland, Ohio; Sims, S. N., St. Joseph, Ill.; Slifer, H. F., North Wales, Pa.; Small, A. R., Chicago, Ill.

(T) Taylor, W. S., San Francisco, Cal.; The Kenyon News & Subscription Co., Chicago, Ill.; Tappey, E. T. Detroit, Mich.